Milan's Wastewater Handbook

MILAN Supply Company

MILAN Engineered Systems

Milan Supply Company's reputation is based on quality products, competitive prices, and dedication to outstanding service.

Product lines that encompass Wastewater Pumps and Accessories, Control Panels, Wastewater Treatment Systems and Dispersal Field accessories, point to our commitment to the industry.

Milan Engineered Systems, a division of Milan Supply Company, focuses on the water resource markets. Milan Engineered Systems, partners with Health Departments, Designers and Contractors to find solutions for Transport, Treatment and Dispersal of Onsite Wastewater.

Contact Milan for your wastewater system needs.

Location	Address	Phone Number	Fax Number
Mt. Pleasant	7125 E. Pickard	1•800•756•4526	1•989•772•3415
Grayling	4603 Hanson Street	1•800•934•7867	1•989•348•7605
Indian River	6031 S. Straits Highway	1•800•856•4658	1•231•238•9776
Traverse City	6986 US31 S.	1•877•786•7867	1•231•276•6147
Sparta	9680 Sparta Avenue	1•800•790•7867	1•616•887•7037
Howell	4950 Mason Rd.	1•888•891•7851	1•517•552•1706

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Revision #08

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Milan Supply Company / Milan Engineered Systems is proud to present "Milan's Wastewater Handbook". This reference lists products that Milan markets and companies that we represent. Milan Supply strives to meet the needs of the wastewater market while partnering with health departments, designers and contractors.

Please review and contact Milan for your wastewater equipment and supply needs. We will assist in both component and pump system selection - utilizing current industry practices, leading manufacturers guidelines, and expressed local health department requirements.

Please be advised that Milan Supply is not an authority on all local health department code requirements. Local health code application is the responsibility of both designers and contractors working within specific jurisdictions.

Milan Supply Company / Milan Engineered Systems does not design or consult. We take pride in the companies we represent, the products that we stock, and the level of customer service that Milan's professional staff exhibit. Milan is a customer driven organization.

This handbook has several technical forms that will help communicate detailed information to determine the best selection for the application. Milan personnel are happy to discuss your project needs.

Dan Milan

Locations Across the State

MILAN Supply Company

MILAN Engineered Systems

"Serving the Water / Wastewater Markets, Shore to Shore"

Service Capabilities

- Project Take-Off
- Application Review
- Equipment Orientation
- System Start Up
- System Assistance

System Specialists

- Effluent & Sewage Lift Systems
- OSI AdvanTex®
- Aerobic Treatment Units
- High Strength Waste Treatment

"Assisting the Designer and Contractor"

GOULDS PUMPS

SUMP PUMPS

SP Submersible Sump Pumps (3/8" Solids)

SPECIFICATIONS
- **Discharge size: 1 1⁄2" NPT.**
- **Temperature: 104ºF (40ºC) maximum,**
- **Solids handling: 3⁄8" maximum spherical.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
SP025V	.25	115	2.4	Auto.	1.5	SEW01055
SP035V	.33	115	3.0	Auto.	1.5	SEW01107

ST "SumpThing" Sub Sump/Effluent (1/2" Solids)

SPECIFICATIONS
- **Discharge size: 1 1⁄2" NPT.**
- **Temperature: 104°F (40°C) maximum**
- **Solids handling: 1⁄2" maximum sphere.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
ST31PV	.33	115	12	Auto.	1.5	SEW01061
ST31P1	.33	115	12	Pig.	1.5	SEW01062

SUMP Pumps Performance Chart

Model	HP	Shut Off	5'	10'	15'	20'	25'
SP02	.25	22'	31	23	15	5	
SP03	.33	30'	40	34	26	17	8
ST31	.33	26'	50	40	28	15	2

EFFLUENT PUMPS

EP 3871 Submersible Effluent Pumps

SPECIFICATIONS
- **Solids handling capability: ¾" maximum.**
- **Discharge size: 1½" NPT.**
- **Temperature:**
104º F (40º C) continuous.

Model	HP	Volts	Amps	Config.	Disc.	Part #
EP0411	.4	115	12	Auto.	1.5	SEW01110

GOULDS PUMPS

PE Submersible Effluent Pumps (1/2" Solids)

SPECIFICATIONS
- **Discharge: 1 1/2" NPT**
- **Temperature: 104ºF (40ºC) maximum,**
- **Solids handling: 1/2" maximum sphere.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
PE41M	.4	115	10	Man.	1.5	SEW01111
PE51M	.5	115	13	Man.	1.5	SEW01112

WE 3885 Submersible Effluent Pumps (3/4" Solids)

SPECIFICATIONS
- **Solids handling capabilities: 3/4" maximum.**
- **Discharge size: 2" NPT.**

104°F (40°C) continuous.
- **Casing: Cast iron volute**
- **Mechanical Seal: SILICON CARBIDE**

Model	HP	Volts	Amps	Config.	Disc.	Part #
WE0311M	.33	115	10.7	Man.	2"	SEW01115
WE0511H	.5	115	14.5	Man.	2"	SEW01120
WE0512H	.5	230	7.3	Man.	2"	SEW01122
WE0511HH	.5	115	14.5	Man.	2"	SEW01125
WE0712H	.75	230	10	Man.	2"	SEW01130
WE1012H	1	230	12.5	Man.	2"	SEW01135
WE1512H	1.5	230	15.7	Man.	2"	SEW01137
WE1512HH	1.5	230	15.7	Man.	2"	SEW01138
WE2012H	2	230	18	Man.	2"	SEW01139

EFFLUENT Pumps Performance Chart

Model	HP	Shut Off	5'	10'	15'	20'	25'	30'	40'	50'	60'
EP04	.4	23'	53	46	36	21					
PE31	.33	25'	52	42	29	16					
PE41	.4	29'		57	46	33	16				
PE51	.5	37'		67	59	50	39	26			
WE03M	.33	25'	86	70	52	27					
WE05H	.5	45'		78	70	60	48	35	10		
WE05HH	.5	60'		58	53	49	45	40	30	17	
WE07H	.75	65'		94	90	83	76	67	45	25	10
Model	HP	Shut Off	10'	25'	50'	60'	80'	100'	120		
WE10H	1	77'	103	94	53	30					
WE15H	1.5	88'	130	117	77	56	15				
WE15HH	1.5	125'	95	87	70	63	47	28	10		
WE20H	2	115'	140	133	110	96	66	30			

GOULDS PUMPS

SEWAGE PUMPS

WW 3872 Sewage Pumps (2” Solids)

SPECIFICATIONS - Pump:
- **Solids handling capability: 2” maximum.**
- **Discharge size: 2” NPT.**
- **Temperature: 104º F (40º C) continuous.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
WW0511A	.5	115	13	Auto.	2”	01136

SPECIFICATIONS-Pump:
- **Discharge: 2” NPT.**
- **Temperature: 104ºF (40ºC) maximum,**
- **Solids Handling: 2” maximum sphere.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
PS51P1	.5	115	13	Pig.	2”	SEW01147

WS 3886 Sewage Pumps (2” Solids)

SPECIFICATIONS - Pump:
- **Solids handling capabilities: 2” maximum.**
- **Discharge size: 2” NPT.**
- **Temperature: 104°F (40°C) continuous.**

Model	HP	Volts	Amps	Config.	Disc.	Part #
WS0312B	.33	230	4.9	Man.	2”	SEW01141
WS0511B	.5	115	14.5	Man.	2”	SEW01145
WS0512B	.5	230	7.3	Man.	2”	SEW01146
WS0712B	.75	230	9.4	Man.	2”	
WS1012B	1	230	12.3	Man.	2”	

WSBHF 3887 Sewage Pumps (2” Solids)

SPECIFICATIONS - Pump:
- **Solids handling capabilities: 2” maximum.**
- **Discharge size: 2” NPT.**
- **Temperature: 104°F (40°C) continuous.**

Model	HP	Volts	Amps	Config.	Disc.
WS0511BHF	.5	115	14.5	Man.	2”
WS0512BHF	.5	230	7.6	Man.	2”
WS0712BHF	.75	230	10	Man.	2”
WS1012BHF	1	230	13	Man.	2”
WS1512BHF	1.5	230	18	Man.	2”
WS2012BHF	2	230	18	Man.	2”

WS 3888 D3 Sewage Pumps 3” Discharge

SPECIFICATIONS - Pump:
- **Maximum solid size: 2.5”.**
- **Discharge size: 3”, 125 # ANSI flange.**
- **Standard silicon carbide**

WS 3888 D4 Sewage Pumps 4” Discharge

SPECIFICATIONS - Pump:
- **Maximum solid size: 3”.**
- **Discharge size: 4”, 125 # ANSI flange.**
- **Standard silicon carbide/silicon carbide outer seal.**

WS 3888 D3 Sewage Pumps 3” Discharge

Model	HP	Volts	Amps	Config.	Disc.
WS1512D3	1.5	230 1PH	11	Man.	3”
WS1532D3	1.5	230 3PH	10	Man.	3”
WS1534D3	1.5	460 3PH	5	Man.	3”
WS1512D3M	1.5	230 1PH	11	Man.	3”
WS1532D3M	1.5	230 3PH	10	Man.	3”
WS1534D3M	1.5	460 3PH	5	Man.	3”
WS2012D3	2	230 1PH	15	Man.	3”
WS2032D3	2	230 3PH	10	Man.	3”
WS2034D3	2	460 3PH	5	Man.	3”
WS3012D3	3	230 1PH	21.5	Man.	3”
WS3032D3	3	230 3PH	12	Man.	3”
WS3034D3	3	460 3PH	6	Man.	3”
WS5012D3	5	230 1PH	26.5	Man.	3”
WS5032D3	5	230 3PH	16.4	Man.	3”
WS5034D3	5	460 3PH	8.2	Man.	3”

WS 3888 D4 Sewage Pumps 4” Discharge

Model	HP	Volts	Amps	Config.	Disc.
WS1512D4	1.5	230 1PH	13.2	Man.	4”
WS1512D4M	1.5	230 1PH	13.2	Man.	4”
WS1532D4M	1.5	230 3PH	10	Man.	4”
WS2012D4	2	230 1PH	16.3	Man.	4”
WS2032D4	2	230 3PH	11.6	Man.	4”
WS2034D4	2	460 3PH	5.8	Man.	4”
WS3012D4	3	230 1PH	21.5	Man.	4”
WS3032D4	3	230 3PH	14.4	Man.	4”
WS3034D4	3	460 3PH	7.2	Man.	4”
WS5012D4	5	230 1PH	26.5	Man.	4”
WS5032D4	5	230 3PH	16.6	Man.	4”
WS5034D4	5	460 3PH	8.3	Man.	4”
WS7532D4	7.5	230 3PH	23	Man.	4”

SEWAGE Pumps Performance Chart

Model	HP	Shut Off	5’	10’	15’	20’	25’	30’	35’
PS51	.5	27’	127	105	75	40	10		
WW05BF	.5	18’		63	27				
WS03BF	.33	19’		80	36				
WS05BF	.5	26’		122	90	50	5		
WS07BF	.75	30’		145	116	86	48	8	
WS10BF	1	38’		183	152	123	95	58	20

Model	HP	Shut Off	10’	20’	30’	40’	50’	60’	70’	80’
WS05BHF	.5	29’	110	62						
WS07BHF	.75	38’	120	98	49					
WS10BHF	1	53’		158	101	60	15			
WS15BHF	1.5	67’		188	150	110	67	29		
WS20BHF	2	82’		218	190	159	120	80	43	5

Model	HP	Shut Off	10’	20’	30’	40’	50’	60’
WS15D3M	1.5	21’	160	15				
WS15D3	1.5	37’	300	210	100			
WS20D3	2	45’		280	185	60		
WS30D3	3	54’		350	265	160	50	
WS50D3	5	64’		435	360	280	170	60
WS15D4M	1.5	20’	300					
WS15D4	1.5	30’	395	225	10			
WS20D4	2	35’		300	100			
WS30D4	3	46’		440	270	75		
WS50D4	5	51’		520	360	175	15	

GOULDS PUMPS

Myers
Pentair Pump Group

Myers offers a complete line of sump, sewage and effluent pumps. All of your wastewater pumping needs can be satisfied with a call to Milan Supply Company.

Sump Pumps

- Battery back-up sump pump for emergencies
- 1/3 HP pedestal pumps
- 1/4 HP through 4/10 HP submersible sump pumps
- Packaged sink tank unit and utility pumps

Effluent Pumps

- A complete line of effluent pumps
- Pumps for enhanced flow, low pressure distribution and others.
- 1/3 HP through 1-1/2 HP ME and P series pumps
- Handle full 3/4" diameter solids

Sewage Pumps

- 4/10 HP through 5 HP submersible sewage pumps
- Handle full 2" solids
- Vortex and 2 vane non-clog impellers
- Complete packaged systems available

SUMP PUMPS

S33 Series Sump Pumps

SPECIFICATIONS:

Solids Handling Capacity- 1/4"
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 1 1/2"
Motor Casing- Cast Iron
Volute Case- Thermoplastic

S33 Series Sump Pumps (1/4" Solids)

Model	HP	Volts	Amps	Config.	Disc.	Part #
S33A1	.33	115	6.5	Auto.	1 1/2"	SEW03105
S33V1	.33	115		Auto.	1 1/2"	SEW03110
S33P-1	.33	115		Auto./Pig.	1 1/2"	SEW03115

SSM33I Series Sump Pumps

SPECIFICATIONS:

Solids Handling Capacity- 1/2"
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 1 1/2"
Motor Casing- Cast Iron

SSM33I Series Sump Pumps (1/2" Solids)

Model	HP	Volts	Amps	Config.	Disc.	Part #
SSM33IP-1	.33	115	9.0	Auto.	1 1/2"	SEW03120

Sump Pumps Performance Chart

Model	HP	Shut Off	5'	10'	15'	20'	25'
S33	.33	25'		29	23	15	
SSM33	.33	23'	31	29	25	15	

EFFLUENT PUMPS

Myers
Pentair Pump Group

ME40 Effluent Pumps (3/4” Solids)

SPECIFICATIONS:

Solids Handling Capacity- 3/4”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 1 1/2”
Motor Casing- Cast Iron,
Volute Case- Thermoplastic

Model	HP	Volts	Amps	Config.	Disc.	Part #
ME40AC-11	.4	115	12	Auto.	1 1/2”	SEW03132
ME40MC-11	.4	115	12	Man.	1 1/2”	SEW03138

ME Series Single Seal Effluent Pumps (3/4” Solids)

SPECIFICATIONS:

Solids Handling Capacity- 3/4”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”
Motor Casing- Cast Iron

Model	HP	Volts	Amps	Config.	Disc.	Part #
ME50S-11	.5	115	12.1	Man.	2”	SEW03150
ME50S-21	.5	230	6	Man.	2”	SEW03152
ME75S-21	.75	230	6.9	Man.	2”	
ME100S-21	1	230	9.3	Man.	2”	SEW03154
ME150S-21	1.5	230	12.8	Man.	2”	SEW03157

MD Series Effluent Pumps (.80” Solids)

SPECIFICATIONS:

Solids Handling Capacity- .080”
Intermittent Liquid Temp.- 86ºF
Discharge (NPT)- 1.25”
Motor Casing- Stainless Steel and Composite

Model	HP	Volts	Amps	Config.	Disc.	Part #
10MD05121	.5	115	11		1.25”	
20MD05121	.5	115	9.5		1.25”	
30MD05121	.5	115	9.5		1.25”	

Effluent Pumps Performance Chart

Model	HP	Shut Off	10’	20’	30’	40’	50’	60’	70’	80’	90’
ME40	.4	32’	70	45	8						
ME50	.5	55’	89	81	68	53	30				
ME75	.75	63’		89	88	61	42	9			
ME100	1	85’		108	98	85	70	55	30	9	
ME150	1.5	95’		118	110	100	89	75	58	33	8
10MD05121	.5	230’		15.0	13.7	12.7	11.5	10.2	8.4	6.5	4.3
20MD05121	.5	145’		30.0	26.0	21.5	14.2	4.4			
30MD05121	.5	100’	38.5	33.3	25.8	16.0					

SEWAGE PUMPS

SRM4 Series Sewage Pumps (2” Solids)

SRM4

SPECIFICATIONS:

Solids Handling Capacity- 2”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”
Motor Casing- Cast Iron

Model	HP	Volts	Amps	Config.	Disc.	Part #
SRM4P-1	.4	115	12	Auto./Pig	2”	SEW03170
SRM4M1C	.4	115	12	Man.	2”	SEW03172
SRM4PC-2	.4	230	6.0	Auto/Pig	2”	SEW03175

CMV5 Series Sewage Pumps (2” Solids)

CMV5

SPECIFICATIONS:

Solids Handling Capacity- 2”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”
Motor Casing- Cast Iron
Volute Case- Thermoplastic

Model	HP	Volts	Amps	Config.	Disc.	Part #
CMV5A-11	.5	115	12	Auto.	2”	SEW03180

MW50 Series Sewage Pumps (2” Solids)

MW50

SPECIFICATIONS:

Solids Handling Capacity- 2”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”
Motor Casing- Cast Iron
Volute Case- Thermoplastic

Model	HP	Volts	Amps	Config.	Disc.	Part #
MW50-11	.5	115	9	Man.	2”	SEW03185
MW50-11P	.5	115	9	Auto./Pig.	2”	SEW03186
MW50-21	.5	230	4.5	Man.	2”	SEW03190

MW Series Sewage Pumps (2” Solids)

MW SERIES

SPECIFICATIONS:

Solids Handling Capacity- 2”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”
Motor Casing- Cast Iron

Model	HP	Volts	Amps	Config.	Disc.
MWH50-21P	.5	230	6.9	Man.	2”
MW100-21	1	230	9.3	Man.	2”
MW150-21	1.5	230	12.8	Man.	2”
MW200-21	2	230	13.1	Man.	2”

WHR / WHRH Series Sewage Pumps (2” Solids)

WHR SERIES

SPECIFICATIONS:

Solids Handling Capacity- 2”
Intermittent Liquid Temp.- 140ºF
Discharge (NPT)- 2”, 3” optional
Motor Casing- Cast Iron
Volute Case- Cast Iron

Model	HP	Volts	Amps	Config.	Disc.	Part #
WHR5-11C	.5	115	13.8	Man.	2”	SEW03192
WHR5-21C	.5	230	6.9	Man.	2”	SEW03193
WHR10-21C	1	230	12.8	Man.	2”	SEW03191
WHR5H-11	.5	115	13.8	Man.	2”	
WHR5H-21	.5	230	6.0	Man.	2”	
WHR10H-21	1	230	12.8	Man.	2”	
WHR15H-21	1.5	230	13.1	Man.	2”	
WHR20H-21	2	230	18	Man.	2”	

Myers
Pentair Pump Group

Myers
Pentair Pump Group

Sewage Pumps Performance Chart

Model	HP	Shut Off	5'	10'	15'	20'	25'	30'	40'	50'	60'
SRM4	.4	19'	89	61	28						
CMV5	.5	18'	86	60	28						
MW50	.5	27'			105	68	17				
MWH50	.5	36'			120	95	70	41			
MW100	1	48'				139	117	92	45		
MW150	1.5	62'							112	55	7
MW200	2	70'							142	88	39
WHR5	.5	23'	127	110	78	40					
WHR10	1	33'	175	169	147	125	90	31			
WHR5H	.5	34'		111	95	79	60	35			
WHR10H	1	46'		145	130	114	100	84	51		
WHR15H	1.5	59'		180	166	151	138	121	90	50	
WHR20H	2	71'			205	190	175	160	130	91	50

CMV1830 SEWAGE BASIN PACKAGE

Myers
Pentair Pump Group

Features and Benefits

- **Wide-angle, mercury-free mechanical float switch for maximum draw down.**
- **Recessed vortex impeller operates completely out of volute and provides free flow through passage for solids and liquids.**
- **UL, CSA, and SSPMA listed.**
- **Oil-filled motor for maximum heat dissipation and continuous bearing lubrication.**
- **Overload protected, shaded pole motor eliminates starting switches.**
- **Recessed vortex impeller provides minimal radial loading for long bearing life.**

Model	Cover	Vent	Discharge	Ship Wgt.
CMV1830	Solid	2"/3"	2"	60#

All components shipped packed inside basin. Package includes: CMV5-11 sewage pump with auto switch, 18"x30" poly basin, 18" domed cover, CV-200P check valve, 2" PVC discharge pipe, and 4" inlet hub ADA compression type. PACKAGE IS NOT ASSEMBLED.

Myers Grinder & Packaged Systems
Simplex / Duplex - Inside and Outside Applications

Grinder Pumps

- **A market leader in the development and installation of grinder pump systems.**
- **2 HP through 15 HP grinder pumps with lifts to 260 feet and flows to 190 GPM.**
- **Offered as complete turnkey systems or engineered to specification.**
- **Computer system design and selection programs available for design assistance.**
- **Explosion-proof construction available.**

	Model	Volts	H.P.	Amps	Conf	Shut-off	10’	20’	30’	50’	70’	90’
Residential	MRG20	230	2	15	auto/pig	105’	45	44	43	41	34	20
Comercial	WGL20	208 230 460	2	15	Manual	105’	45	44	43	41	34	20

MYERS SYSTEM BENEFITS

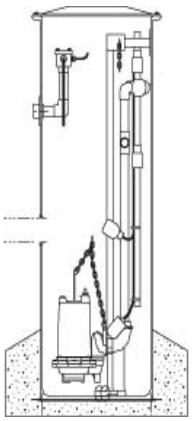
- Eliminate guesswork of selecting components
- No mismatched or improperly fitting parts
- Easy installation - installer only has to excavate, secure, connect discharge lines, locate and mount inlet hub, locate and mount panel, install pump in basin and connect electrical wiring.

Suspended Packaged Basin System for Inside Installation

Includes: 30”x36” basin with steel epoxy coated cast iron pump cover with flanges, 3” vent flange, CV125A3 check valve, level control, alarm control, galvanized discharge and support piping, support collar and inlet flange for 4.50” O.D. plastic pipe.

Product #	Description	Ship Wt.
MRG20-SS1	30” x 36” Basin, Pump, Piping, Misc. Accs.	244

Turnkey Grinder Packages and Rail Systems



A 24” Dia. by 5 ft. - 8 ft. deep fiberglass basin with an anti-floatation collar molded to the bottom includes: Basin cover - 3/8” thick polypropylene cover attached by stainless steel cap screws, Rail assembly, Sch 80 PVC discharge piping, PVC ball type shut-off valve. A ball check valve will be installed in the internal discharge line. The three float, Nema 4X pump panel will control pump and signal high water alarm. Panel is designed for remote mounting.

Additional Basin sizes available to 60” DIA.

Basin Depth	Part Number	Ship Wt. LBS
5-Ft.	SRA125-5-F-01	300
6-Ft	SRA125-6-F-01	320
7-Ft.	SRA125-7-F-01	340
8-Ft.	SRA125-8-F-01	360

Myers
Pentair Pump Group

Sta-Rite Pumps

EC3 Series Effluent Pumps

The EC3 Series pump is a small, rugged, submersible cast iron pump with a non-clog vortex impeller and solids handling capability to 3/4".

Cast Iron Submersible Effluent Pumps

Model	HP	Volts	Amps	Config.	Disc.	Part #
EC333120M	.33	115	12	Pig.	2"	SEW04050

EC6/7 Series Effluent Pumps

Our best, the EC6/EC7/EH7 Series pump is a rugged, submersible cast iron pump with a non-clog, semi-open impeller and solids handling capability to 3/4".

Cast Iron Submersible Effluent Pumps

Model	HP	Volts	Amps	Config.	Disc.	Part #
EC650120M	.5	115	12	Pig.	2"	SEW04053
EC750120M	.5	115	13	Pig.	2"	SEW04055

Effluent Pumps Performance Chart

Model	H.P.	Shutoff	5'	10'	15'	20'	25'	30'	40'	50'	60'
EC33	.33	21'		46	33	12					
EC65	.5	50'		92	85	78	63	50	32	5	
EC75	.5	60'		110	105	95	88	85	65	30	

Culvert - Poly / Steel

Corrugated Poly Pipe & Fittings

4" x 150' Slotted Coil (150)	CUL94500
4" x 150' Slotted Coil W/Sock (150)	CUL94505
4" x 150' Solid Coil (150)	CUL94510
4" x 250' Corr. W/Sock, Blk	CUL94512
4" Corrugated Internal CPLG.	CUL94515
4" Corrugated WYE	CUL94520
4" Corrugated Internal Plug	CUL94521
4" Corrugated Tee	CUL94522
4" Internal Tee	CUL94523
4" Corrugated 90 ELL	CUL94526

6" x 100' Solid	CUL94600
6" x 100' Corrugated W/Sock	CUL94602
6" Corg. Perf. 100' Roll	CUL94605
6" Corrugated Internal CPLG.	CUL94608
6" Corg. End Cap	CUL94611
6" Corrugated Tee	CUL94614

Culvert - Poly Smooth Wall

8" Cul Smooth Flow with Bell	CUL95508
12" Cul Smooth Flow with Bell	CUL95522
15" Cul Smooth Flow with Bell	CUL95525
18" Cul Smooth Flow with Bell	CUL95528
24" Cul Smooth Flow with Bell	CUL95534
24" Poly End Cap	CUL95535
18" Fralo Lid	CUL95539
24" Fralo Lid	CUL95540
24" Jackel Drainage Grate	SEW21163
24" Jackel Riser Lid (no logo)	SEW21166

Culvert - Galvanized

12" Gal Culvert (per foot)	CUL95520
12" x 12" Galv. Culvert Band	CUL95500
15" Gal Culvert (per foot)	CUL95521
15" x 7" Band	CUL95510

AdvanTex® AX20 Treatment Systems

AdvanTex® Treatment Systems are the ideal solution for secondary treatment of residential wastewater flows. Orenco's patented* AdvanTex systems consistently produce such good effluent — e.g., BOD and TSS in the 10/10 mg/L range, even under peak flow conditions — that homeowners often have them installed with subsurface drip systems for landscape irrigation.

AdvanTex has been approved in most of North America, and more than 10,000 AdvanTex filters are now in use. AdvanTex has also passed ANSI and NSF Standard 40 testing protocols. A nitrogen-reducing configuration is available.

AdvanTex Treatment Systems come as a complete package including pumping system, treatment media, and all accessories. The treatment media — a highly absorbent engineered textile — treats a tremendous amount of wastewater in a small space. Consequently, AdvanTex systems are compact and require a very small system footprint. Systems are flush to the ground and, in most cases, the watertight basin that holds the treatment media can be installed right on top of the tank.

AdvanTex Treatment Systems are part of a comprehensive program that includes trained and authorized installers and service providers, regular operation and maintenance, remote telemetry monitoring, and lifetime data tracking by distributors. Consequently, residential AdvanTex systems are sold through a separate channel of authorized AdvanTex Distributors.

AdvanTex® AX100 Treatment Systems

AdvanTex® AX100 Treatment Systems are the ideal solution for large residential flows, commercial flows, and community-wide wastewater treatment. The patented* AX100 can make raw wastewater up to 98% cleaner and meet the most stringent regulatory requirements. It can also reduce nitrogen significantly, depending on influent and configuration. Because the AX100 produces such consistently clean effluent, it is frequently installed with subsurface drip systems for water reuse.

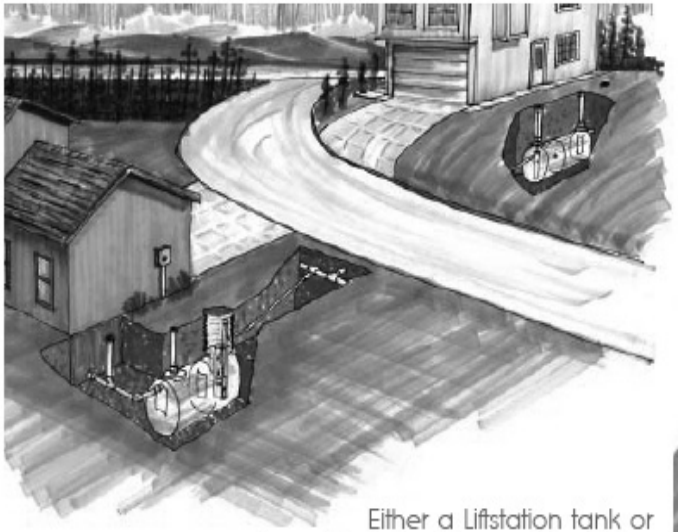
Like the AX20, the AX100 comes as a complete package and uses an engineered textile for the treatment media. It is compact, easy to install, easily serviceable, and allows peak loading rates as high as 50 gpd/sq.ft. Orenco's AX100 product line was introduced in 2002, and nearly 1,000 AX100 filters are now in use.

Orenco's commercial-sized AdvanTex Treatment Systems are part of a comprehensive program that ensures they are appropriately designed, correctly installed, and properly started up and maintained. The program includes trained and authorized installers and service providers, as well as educational workshops for designers, engineers, and regulators. Every project follows a checklist, and an online project management tool with automated reporting functions ensures all parties are kept apprised of project progress.

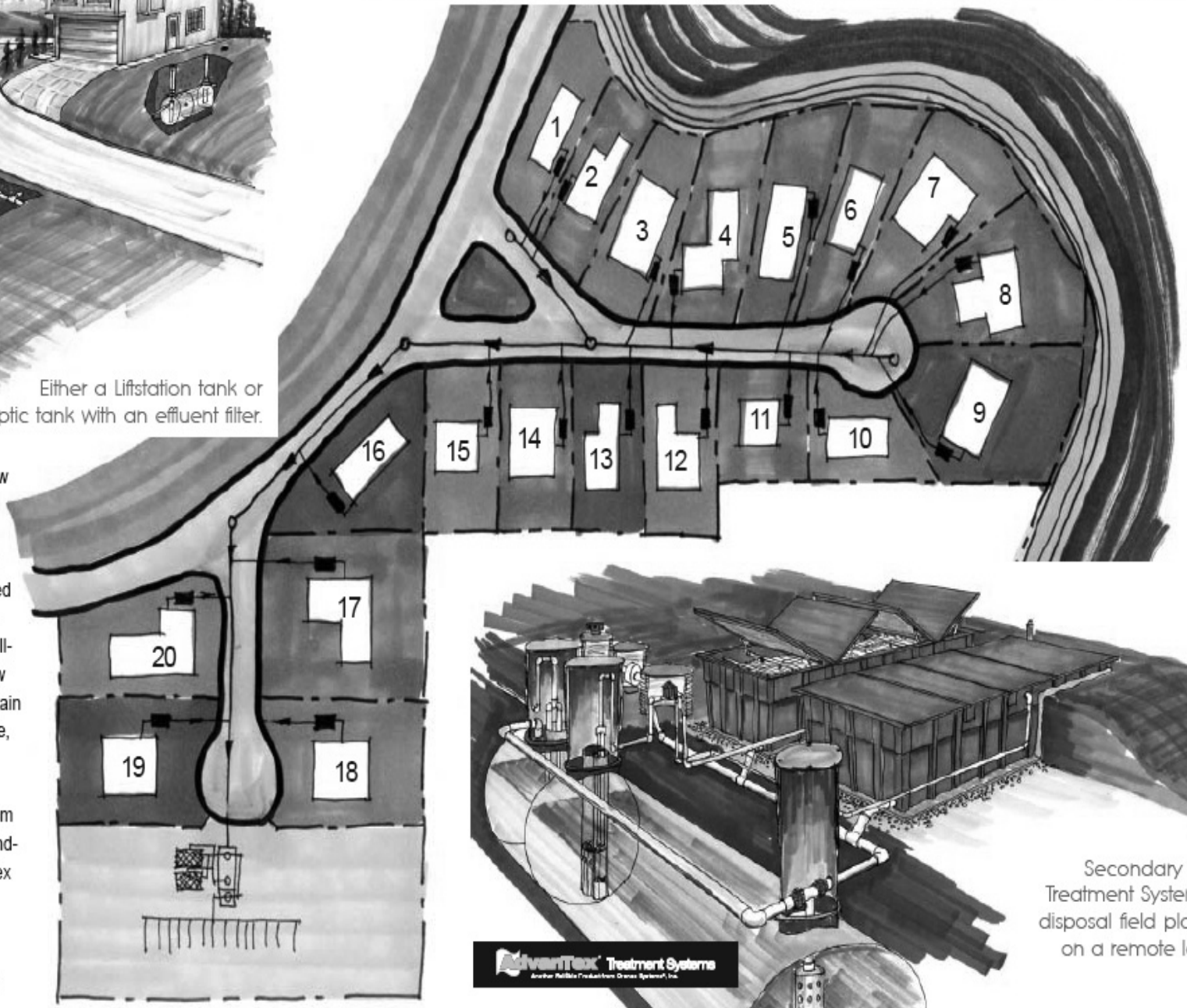
In addition, every system benefits from ongoing manufacturer support, ongoing O&M, real-time monitoring and control via telemetry-enabled control panels, and lifetime data tracking by distributors. Consequently, commercial AdvanTex systems are sold through authorized Commercial AdvanTex Distributors.

How an Orenco Effluent Sewer Works.

Primary Treatment Tank at each home or business.



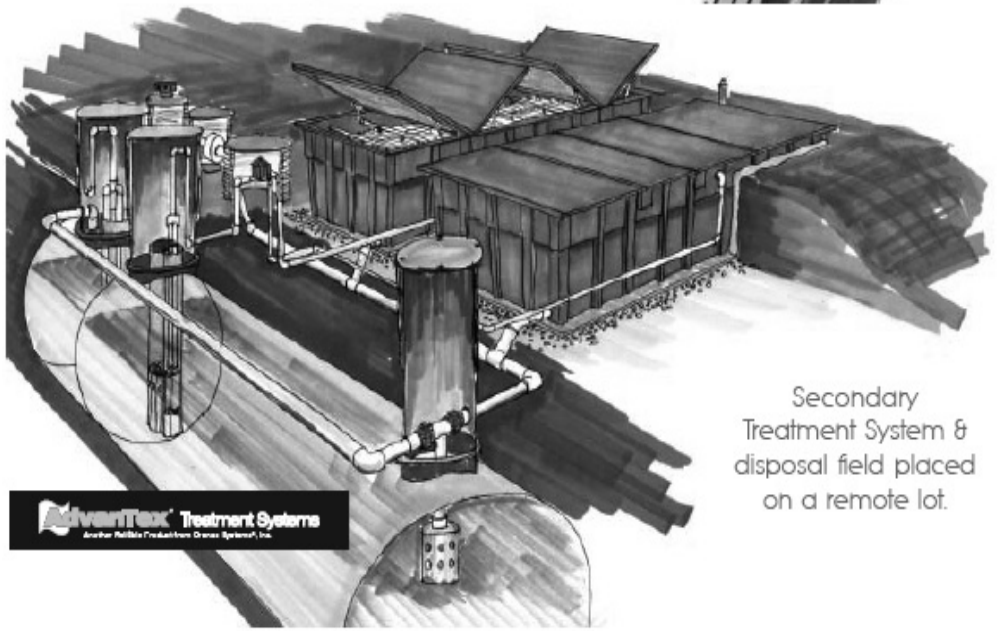
Either a Liftstation tank or a gravity septic tank with an effluent filter.



With an Orenco Effluent Sewer, raw sewage flows from the house or business into a watertight underground tank where it is pretreated. Only the filtered liquid is discharged (by either pump or gravity) through small service lines to shallow, small-diameter collection lines that follow the contour of the land. Solids remain in the underground tank for passive, natural treatment.

The high-quality filtered effluent from an effluent sewer is ideal for secondary treatment by Orenco's AdvanTex Treatment System located on a remote lot.

Systems are designed as a totally integrated package.



Secondary Treatment System & disposal field placed on a remote lot.

Orenco Systems®
Incorporated

All Orenco pump packages have these basic components:

- Biotube® pump vault
- Splice box
- Float switch assembly
- Discharge plumbing assembly
- Effluent pump
- Control panel

Tank, risers, lids, and tank accessories must be ordered separately.

Orenco Systems Inc. - STEP Systems

Orenco pumping packages are used for pumping effluent from single or double compartment septic tanks and dosing tanks. Patented Biotube® vault technology filters out solids so that only liquid from the "clear zone" between the tank's scum and sludge layers is pumped. This reduces biological loading and clogging of downstream components, saving money in O&M and extending the life of drainfields and other downstream components.

All systems are preassembled with corrosion-resistant, durable components, ensuring reliability. To simplify the selection process for Orenco pumping systems, we have developed pump and pump basin packages that fit most applications.

Design Aid CD-ROM

Orenco's Design Aid Catalog and CD-ROM is an invaluable tool for designers of onsite wastewater treatment systems. It includes Orenco's stand-alone PumpSelect™ program that takes the guesswork out of sizing pumps and configuring carrier lines. PumpSelect™ provides fast, error-free hydraulic calculations and generates system curves.

Biotube Pump Vaults

Orenco Biotube® pump vaults are used to transport filtered effluent from septic tanks or separate dosing tanks in effluent pumping systems. Pump vaults house a Biotube effluent filter and one or two Orenco high-head effluent pumps and can be used in single-compartment septic tanks with flows up to 40 gpm. When flows are greater than 40 gpm, a double-compartment septic tank or separate dosing tank is recommended. Pump vaults are 12 in. in diameter, and accommodate one pump (simplex) or two pumps (duplex). Each pump vault comes with a Biotube filter cartridge, vault housing, support pipes, and float bracket to hold the float assembly. Custom lengths can be produced.

High-head Effluent Pumps — PF Series

Orenco high-head effluent pumps are manufactured specifically for wastewater applications, to transport filtered effluent from septic tanks. High-head capabilities make them the ideal choice for STEP effluent sewer systems. Steep pump curves provide high-pressure capacity to clear plugged orifices in pressurized distribution systems. Orenco high-head effluent pumps possess a high cycling capability (up to 300 cycles/day on most models), which is needed for optimum treatment in many of today's high performance onsite systems.

Pump Discharge Assemblies

Orenco pump discharge assemblies (hose and valve assemblies) are used to convey effluent from a pump to the exterior of a riser or pump basin. Pump discharge assemblies come preassembled and are composed of PVC valves and flexible hose that simplify installation and maintenance. Discharge assembly with a cold weather kit allows deeper burial of the discharge line.

Float Switch Assemblies

Orenco float switch assemblies can be mounted in pump vaults, effluent screens, pump basins, and risers. Float switch assemblies are preassembled with one or more floats mounted on a 1-in. PVC float stem. ABS float collars provide secure mounting that is easily adjustable.

Internal Splice Boxes

Orenco internal splice boxes are used to safely house spliced wire connections between an electrical control panel and such equipment as effluent pumps and float switches. These PVC splice boxes are available with 1 to 6 watertight cord grips, and come with watertight splicing kit.

Pump It Up!

Ideal for:

- Effluent sewers
- Drainfields
- Textile filters
- Sand filters
- Peat filters
- Mounds
- Trickling filters
- Aerobic units
- Wetlands
- Lagoons
- Effluent irrigation
- Other applications

Typical system components:

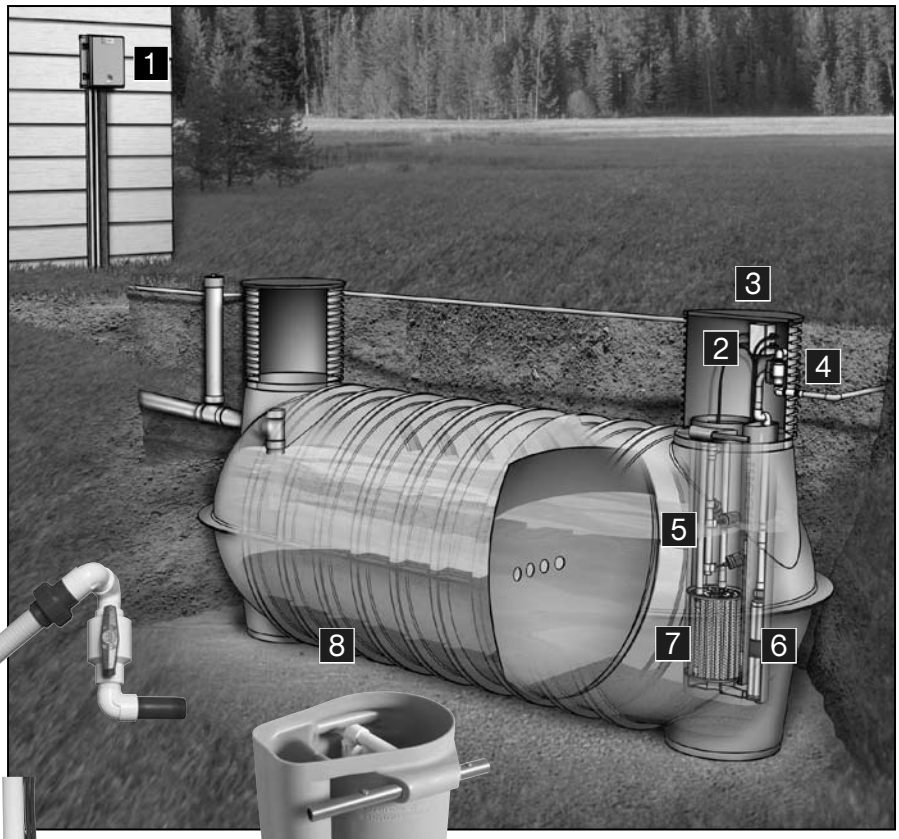
1. Control Panel
2. Splice Box
3. Riser, Lid, and Accessories
4. Discharge Assembly
5. Level Control Float Assembly
6. Effluent Pump
7. Biotube® Pump Vault
8. Orenco® Fiberglass Tank

It doesn't always flow downhill.

ProSTEP™

Effluent Pumping Systems

ProSTEP™ Effluent Pumping Systems transport and filter septic tank effluent, protecting "downstream" components. Fully integrated package ... no "parts and pieces." In-tank equipment is lightweight, comes preassembled, and installs neatly into most tanks, saving time and money.



MILAN Engineered Systems

MILAN Supply Company

Orenco Lids

Lid, Fiber FL18G-4BU	SEW21145
Lid, Fiber FL24G-4BU 4 Blt	SEW21165
Lid, Fiber FL24GI2-4BU 4 Blt	SEW21167
Lid, Fiber FL30G 30”	SEW21170
Lid, Fiber FL30G12 30” W/2” Ins.	SEW21172
RLA24 24” Riser Lid ADPT	SEW21164

Risers

UR18 x 13’ Riser Ultra Rib x Foot (RPU18)	SEW20850
UR24 x 14’ Riser Ultra Rib x Foot	SEW20896
Riser RR2412 24” x 12 “ Plain	SEW20920
Riser RR2418 24” x 18” Plain	SEW20940
Riser RR2424 24” x 24” Plain	SEW20960
Riser RR2430 24” x 30” Plain	SEW20980
Riser RR2436 24” x 36” Plain	SEW21000
Riser RR2448 24” x 48” Plain	SEW21010
Riser RR2460 24” x 60” Plain	SEW21012
Riser RR3012 30” x 12” Plain	SEW21040
Riser RR3024 30” x 24” Plain	SEW21080
Riser RR3030 30” x 30” Plain	SEW21100
Riser RR3036 30” x 36” Plain	SEW21120
Riser RR3048 30” x 48” Plain	SEW21130
Riser RR3060 30” x 60” Plain	SEW21132

Riser Accessories

GRI24 Grade Ring Insert	SEW21220
GRI30 30” Grade Ring Insert	SEW21230
RRFTA Tank ADPT 21”/24”	SEW21240
RRFTA30 Tank ADPT	SEW21250
PRTA24 Tank ADPT 24”	SEW21260
PRTA30 30” Tank ADPT Cast-In	SEW21265
RRFTA30BDKIT Bolt Kit	SEW21280
SSMK 2 Part Epoxy Manual Gun	SEW21285
SS115 1Qt 2 Part Epoxy	SEW21290
SS620 Mixing Tube	SEW21295
Epoxy 1Pt ADHP10	SEW21300
Epoxy 1Qt ADHQ10	SEW21310
Epoxy Riser ADPT ADH100	SEW21315
MA320 Epoxy Kit	SEW21320

Riser Grommets

Pipe Grommet 1” G1L	SEW21330
Pipe Grommet 1.25” G125L	SEW21340
Pipe Grommet 1.5” G150L	SEW21350
Pipe Grommet 2” G2L	SEW21360
Pipe Grommet 3” G3L	SEW21370
Pipe Grommet 4” G4L	SEW21380

Orenco Pump Vaults

SV1548-16 Low Head Screened Pump Vault	SEW20000
PVU57-2419L Biotube Vault 57” Deep	SEW20010
PVU68-2425L Biotube Vault 68” Deep	SEW20015

Orenco High Head Pumps

PF100511 Pump 115V 1/2HP 10 GPM	SEW20140
PF200511 Pump 115V 1/2HP 20 GPM	SEW20170
PF300511 Pump 115V 1/2HP 30 GPM	SEW20210
PF300511-20 115V 1/2HP 30 GPM	SEW20230
PF500511 115V 1/2HP 50 GPM	SEW20250
5 Year Warranty	SEW20290

Hose & Valve Assembly

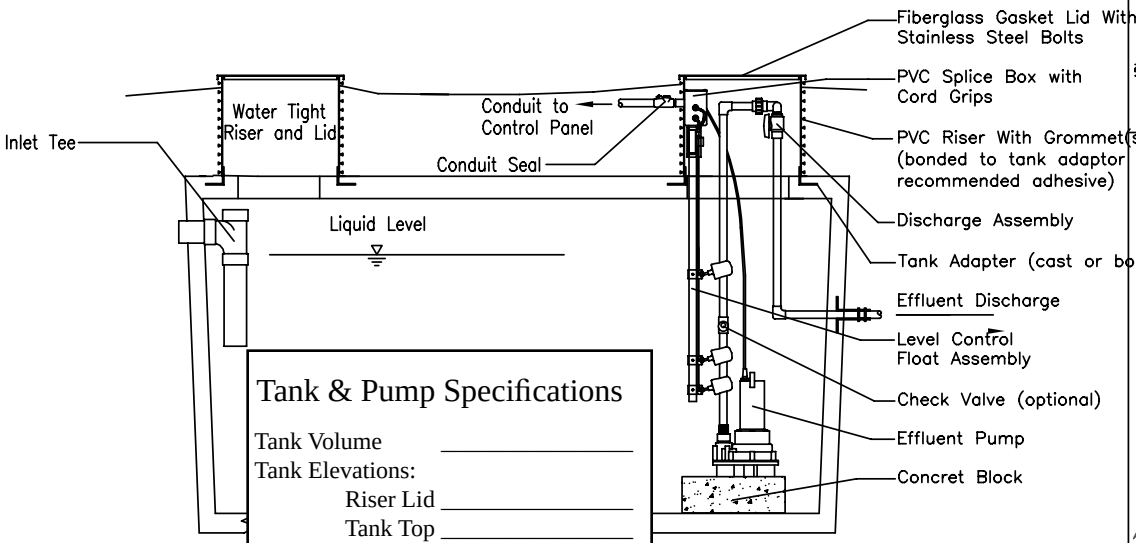
HV125BASX MSC Anti-Siphon W/Ball Valve	SEW20360
HV100BFCASMSC W/Anti-Siphon	SEW20430
HV100BFCXMSC (Step) 1” Hose Assy.	SEW20431
HV125BXMSC 1.25” Hose Assy. W/FTGS	SEW20432
HV150BXMSC 1.5” Hose Assy. W/FTGS	SEW20433
HV200BXMSC 2” Hose Assy. W/FTGS	SEW20434

Floats

MF1A Float Mercury N.O. Signal Float	SEW20510
MF1A-30 Float W/30’ Cord N.O. Signal Float	SEW20515
MF1B Float Assy. N.O. 3.75”-4.5” Pump Float	SEW20530
MF1T Float Assy N.C. ISR	SEW 20554
MF3A-51” Float Assy.	SEW20565
MF2A-51” Float Assy.	SEW20570
MFAB-51” Float Assy.	SEW20575
MF2BT-51” Float Assy.	SEW20580
RRFB Float Bracket	SEW21400
MFCOLLAR1 Adj. Float Collar	SEW21790

Splice Boxes

SB1 Splice Box PVC	SEW21430
SB2 Splice Box PVC	SEW21440
SB3 Splice Box PVC	SEW21450
SB4 Splice Box PVC	SEW21470
SB5 Splice Box PVC	SEW21490
SB6 Splice Box PVC	SEW21510
External Splice Box (4 cord)	SBEX4
External Splice Box (5 cord)	SBEX5



Tank & Pump Specifications

Tank Volume _____

Tank Elevations:

- Riser Lid _____
- Tank Top _____
- Inlet Invert _____
- Outlet Invert _____
- Tank Bottom _____

Pump Description:

- Make _____
- Model _____
- GPM_____ TDH _____
- HP_____Volts_____

Water Tight Tankage Spec.
It Is Necessary That Tanks Be Vacuum Or Water Tested To Certify Water Tight Tankage. PVC Acces Risers Must Be Water Tight, Epoxied To Tankage And Bolted Down For Liability Consideration. Contractor/Tank Manufacturer Shall Be Responsible For Repair Or Replacement Of Tanks With Leaks or Defects.

STEP System
Septic Tank Effluent Pump
Model: STEP LH

DRAWN ADL | SCALE | DATE 12/13/02 | APPROVED

7125 East Pickard Road
P. O. Box 309
Mt. Pleasant, MI 48804-0309
ph-989-773-9938
fax-989-772-3415

MILAN Engineered Systems

NO | REVISION | DATE | BY

SHEET 1 OF 1

DRAWING NO. S3

Orenco Systems®
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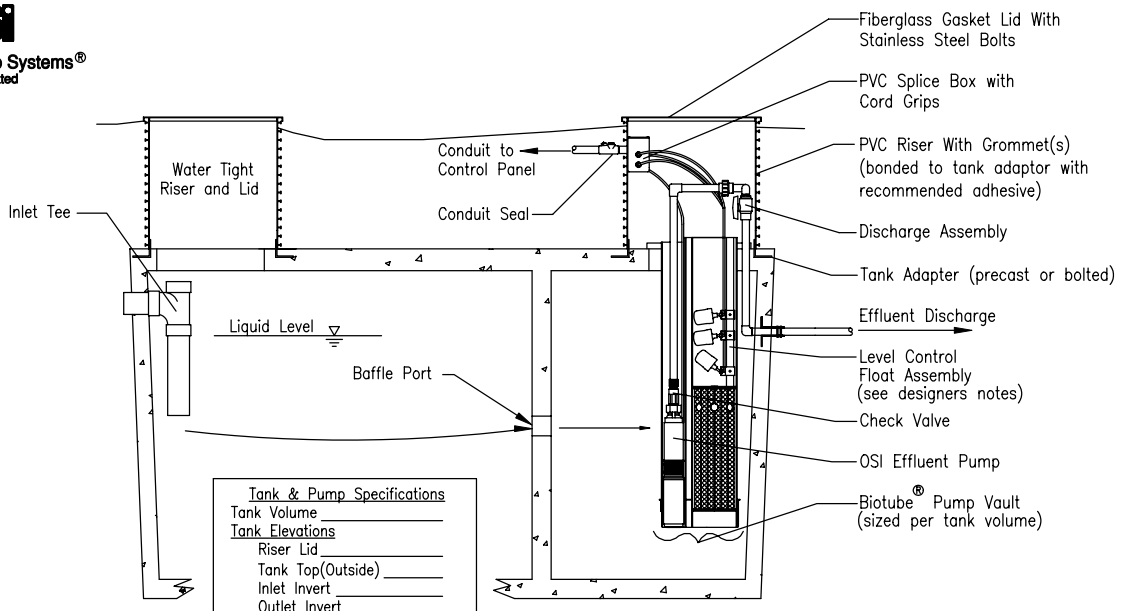

Fiberglass Gasket Lid With Stainless Steel Bolts
PVC Splice Box with Cord Grips
PVC Riser With Grommet(s) (bonded to tank adaptor with recommended adhesive)
Discharge Assembly
Tank Adapter (precast or bolted)
Effluent Discharge
Level Control Float Assembly (see designers notes)
Check Valve
OSI Effluent Pump
Biotube® Pump Vault (sized per tank volume)
Water Tight Riser and Lid
Conduit to Control Panel
Conduit Seal
Inlet Tee
Liquid Level
Baffle Port

Tank & Pump Specifications
Tank Volume _____
Tank Elevations
Riser Lid _____
Tank Top(Outside) _____
Inlet Invert _____
Outlet Invert _____
Tank Bottom _____
Pump Description
Make _____
Model _____
GPM @ TDH _____
HP _____
Voltage/Phase _____
Dose Volume _____

Water Tight Tankage Spec.
It Is Necessary That Tanks Be Vacuum Or Water Tested To Certify Water Tight Tankage. PVC Acces Risers Must Be Water Tight, Epoxied To Tankage And Lids Bolted Down For Liability Consideration. Contractor/Tank Manufacturer Shall Be Responsible For Repair Or Replacement Of Tanks With Leaks or Defects.

Patents # 4,439,323 & 5,492,635
Foreign Patents Pending
© Orenco Systems, Inc.

STEP System
Septic Tank Effluent Pump
Model: STEP HH PV (2 Comp)

DRAWN jdu | SCALE | DATE 12/20/04 | APPROVED

7125 East Pickard Road
P. O. Box 309
Mt. Pleasant, MI 48804-0309
ph-989-773-9938
fax-989-772-3415

MILAN Engineered Systems

NO | REVISION 12/04 | DATE | BY jdu

SHEET 1 OF 1

DRAWING NO. S1A

Orenco Systems® Inc.
Changing the Way the World Does Wastewater®

S1ROHTETMCT Panel	SEW20690
S1HTETMCT Panel	SEW20710
MVP-SIPTROHT/ Simplex Timer Panel	SEW20722
VCOM S1ROHT Panel Simplex 115V	SEW20785

S Series Simplex Control Panels

Simplex control panels can be used for pressure sewer (STEP) systems, onsite treatment systems, and pump control into conventional gravity or pressurized drainfields. "S" series pump control panels are a popular choice for a simplex pump and alarm system. These panels include a motor contactor, which increases system life by reducing the load requirements on the float switches. "S" Series panels also allow options such as a programmable timer or use of larger horsepower pumps.

MVP-S Series Simplex Control Panels

Orenco's digital programmable MVP control panels are specifically designed for use with effluent pumping and onsite treatment systems, when pumping from point "A" to point "B." All MVP panels include an easy-to-use, programmable logic unit that incorporates many timing and logic functions, such as multiple timing intervals to adjust for changing flow conditions. MVP panels offer several functions as standard, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one float switch type for all functions. The panels include motor contactors and accept all standard options.

VeriComm Telemetry Control Panels (VCOM)

VeriComm® control panels and the VeriComm Monitoring System are integral components of a complete remote monitoring system and cannot be ordered separately from each other.

Orenco's VeriComm® line of affordable telemetry control panels, coupled with the VeriComm web-based monitoring system, has been designed specifically for decentralized wastewater collection and treatment for residential systems. VeriComm gives wastewater system operators and service providers the ability to remotely monitor and control each individual site's performance, saving money on operation and maintenance while remaining virtually invisible to the homeowner.

In addition to including all the features of a standard panel for the same application, VeriComm panels include a number of very "smart" features:

- **Communication and alarm management;**
- **Three operating modes ("start-up" and "test" modes, as well as a "normal" mode);**
- **Data collection and logs;**
- **Troubleshooting and diagnostic logic; and**
- **Advanced control logic to keep system operating normally in the event of float failures.**

All VCOM panels have elapsed time meters and counters, which are built into the telemetry unit and are viewable via Internet and direct connection with a laptop or Pocket PC® device (Bluetooth® Kit required). VCOM panels share existing phone lines, and include a DSL filter/surge arrestor for the phone line as a standard feature. They also have the ability to use one float switch type for all functions.

Orenco Custom Control Panels

Orenco's most notable lines of custom control panels include the following:

Consult your Milan Rep for Custom Panel Specs

PLC Panels

For large systems, when the requirements of a system are greater than an MVP panel can handle, a custom PLC panel is a good option. PLCs have virtually unlimited memory and a larger number of inputs and outputs available to panel designers. In addition to including many of the same features as standard MVPs (such as digital timing and indication of input and output status), PLC panels also have multiple options for operator interfaces, from two-line text displays to color touch-screen graphical displays. PLCs support many communication protocols and can be interfaced with a variety of systems.

TCOM Panels

Orenco TeleComm™ (TCOM) panels are cost-effective, integrated panels that include digital control, data logging, and remote access and control in real time. They are ideal for stand-alone monitoring and control systems. Alarm notifications are sent to numeric pagers. Panels can be accessed directly at the site with our Bluetooth Kit, a null-modem cable, and a laptop, or remotely using a computer with a modem. TCOM panels require a dedicated phone line. TCOM panels share some of the control features of our standard VCOM panels, but the monitoring interface is not Web-based. HyperTerminal™ or a similar VT100 terminal emulator (commonly bundled with most computer operating systems) is all you will need to communicate with TCOM panels; no special computer software is required.

Orenco offers multiple lines of controls covering a wide range of applications:

- Alarm panels
- Standard (electromechanical) panels
- MVP (digital programmable) panels
- VCOM remote telemetry panels with VeriComm® Web-based monitoring
- TCOM remote telemetry panels with real-time connectivity
- Custom panels

All Orenco panels include:

- Touch-safe controls
- Three-year warranty
- NEMA4X rating for wet locations
- UL, UL-C listing

Orenco Systems® specializes in designing and manufacturing control and monitoring systems for the water handling and wastewater industries. Our experts know what issues are important to designers, engineers, and system operators. From simple alarms, to tried and true standard (electromechanical) panels, to MVP (digital programmable) panels, to Web-based remote telemetry control systems, to custom-built real-time networked remote telemetry control systems, Orenco offers the best value for your dollar.

We use the finest, precision-engineered components available, and we back our panels up with ongoing research, years of applied experience, and a three-year warranty. Available with UL 508 and 698A listing for industrial control panels in the US and Canada. CE marking available for European markets.

These panels have been designed for use in the onsite industry, but they can also be used in many other applications. Our standard control panels, customized panels, remote telemetry panels, and Web-based monitoring system are unsurpassed in the control system industry.

Option	Benefit
IR (intrinsically safe relay)	The intrinsically safe relay option is required for systems with tanks in applications classified as hazardous locations (Class I, Division 1) (UL 698A). Intrinsically safe control panels are designed so that the energy delivered to the floats is insufficient to cause an ignition of a flammable gas in the tanks. One intrinsically safe relay is required for every two floats. The panel nomenclature indicates how many relays are included with the panel. For example, DAX1IR2PTRO would indicate two relays for use with up to four floats.
PT (programmable timer)	The programmable timer allows the system to be timed-dosed. Timed dosing provides superior wastewater treatment by delivering the effluent in discrete doses at regular intervals and can reduce the chances of saturated soil conditions due to hydraulic overloading. A properly set timer is matched to the design flow of the system and allows for early detection of system abuses, before major damage occurs. Recommended for all treatment systems.
RO (redundant off float)	The redundant off option uses a signal float to prevent pumps from operating when there is not enough liquid in the tank. This helps to prevent damage to pumps by activating an alarm during abnormally low level conditions. The redundant off option also detects leaky tanks or systems that are siphoning. In addition, the redundant off float acts as a backup in case another float gets stuck. Recommended for all pumping systems.
CS (current sensor)	Current sensors monitor pump operation and are used to detect a pump failure in systems where a pump failure will not necessarily lead to a high-water alarm condition. With a current sensor, an alarm will be activated if the pump is called to run, but pump current is not detected. Current sensors are highly recommended in systems in which it may be difficult to detect a pump failure, such as a duplex alternating system. Recommended for commercial systems.
DS (disconnect switch)	The disconnect switch option allows for a single shut-off point for all power entering a panel. This switch is an easy means to disconnect power when maintenance needs to be done or when there is an emergency.
RA (remote alarm)	The remote alarm option provides a dry contact closure in the panel for connection of external devices that might use voltages up to 240 VAC. (All Orenco control panels include a 120 VAC output to activate remote alarms.) The remote alarm option is especially useful for phone dialers and is recommended when voltage needs are unknown.
TS (test switch)	The test switch option provides a single switch that can be used to confirm the operation of the alarm light and audible alarm.
HT (heater)	The heater option keeps the panel warm in cold weather and reduces panel condensation. The heater automatically adjusts its output wattage with varying temperature. Recommended for all MVP, PLC, and telemetry control panels.
ETM (elapsed time meter)	The elapsed time meter option provides an electromechanical totalizing meter that records the total time that a pump has been called on to run by the controls. The run time can be used to calculate flow through a system. (An elapsed time meter function is built into MVP and telemetry panels as a standard.) Recommended for all pumping systems.
CT (counter)	The counter option provides an electromechanical totalizing meter that records the total number of cycles that a pump has been called on to run by the controls. When combined with the ETM option, variances in the counter activity can reveal problems with pumps or floats. (A counter function is built into MVP and telemetry panels as a standard.)
PRL (pump run light)	The pump run light option provides a green light on the front of the panel enclosure that will illuminate when the pump is called to run by the controls.
PL (power light)	The power light option provides a green light on the front of the panel enclosure that will illuminate when the control panel has power.
SA (surge arrestor)	The surge arrestor option reduces system performance problems caused by power irregularities, such as surges and spikes. Recommended for MVP, PLC and telemetry control panels.

Orenco Custom Panel Quote Request

Customer

Company:
Your name:
Phone:
Fax:
Address:
Email:

Engineer

Engineer's company:
Engineer's name:
Engineer's phone:
Engineer's fax:
Engineer's address:
Engineer's email:

Project

Project name:
City:
State:
Specs available?
Date needed:

Primary contact:
Preferred contact method:
☐ Phone
☐ Fax
☐ E-mail

Electrical Service

Voltage: Phase: Frequency: Is 120 VAC, single-phase, 60 Hz available for control panel? ☐ Yes ☐ No

Pump

Voltage: Phase: Frequency: Hp: FLA:

Make and model:
☐ Over-temperature sensor
☐ Seal fail
Type:
☐ Capacitor pack
Dimensions:

Panel Operation

Panel base model: Number of pumps:

Float functions: Number of floats:

Alternating Operation
☐ Alternating (duplex) (two pumps)
☐ Alternating (triplex) (three pumps)
☐ Alternating (quadruplex) (four pumps)
☐ Nonalternating (all pumps run together)
☐ Nonalternating (pumps run independently)
☐ Other:

Timer settings (if applicable):

	Tank #1	*Tank #2*
Cycle off:		
Cycle on:		
Override off:		
Override on:		

Panel Options

Microprocessor-based control
☐ MVP (programmable logic module)
☐ PLC (programmable logic controller)
☐ TCOM (custom telemetry)

Main disconnect
☐ Internal
☐ Handle on enclosure front

Elapsed time meter
☐ Include in logic unit if capacity available
☐ External component required

Cycle counter
☐ Include in logic unit if capacity available
☐ External component required

Flashing alarm light
☐ Small (2 in. diameter)
☐ Large (4 in. diameter)
☐ Caged (5 1/2 in. diameter)

Phone dialer
☐ 2-channel real voice
☐ 4-channel
☐ 8-channel real voice

☐ Intrinsically safe relay (Class I, Division 1) (UL 698A)
☐ Redundant off
☐ Current sensor
☐ Dry contact for alarm
☐ Alarm test switch
☐ Heater
☐ Pump run light
☐ Power light
☐ Surge arrestor
☐ GFI receptacle
☐ Control transformer
☐ Phase monitor
☐ Over-temperature light
☐ Number of fans (write in): _____

MILAN Supply Company

☐ Other options (write in):

Panel Construction

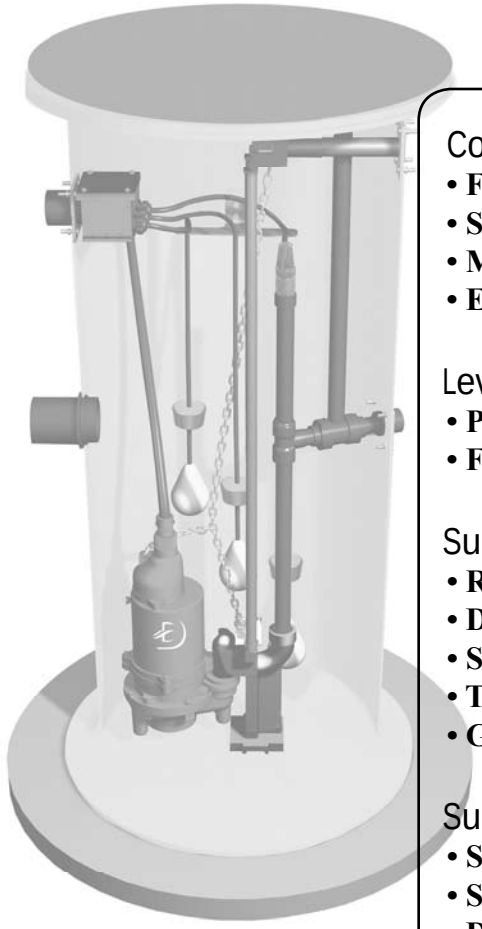
Enclosure type
☐ Stainless steel NEMA4X
☐ Steel NEMA4
☐ Least expensive NEMA4
☐ Other:
☐ Deadfront

General Comments

© 2007 Orenco Systems, Inc.

Delta Environmental Products™
Pentair Water

Grinder Packages, Retrofit Kits
Low Pressure Sewer Systems

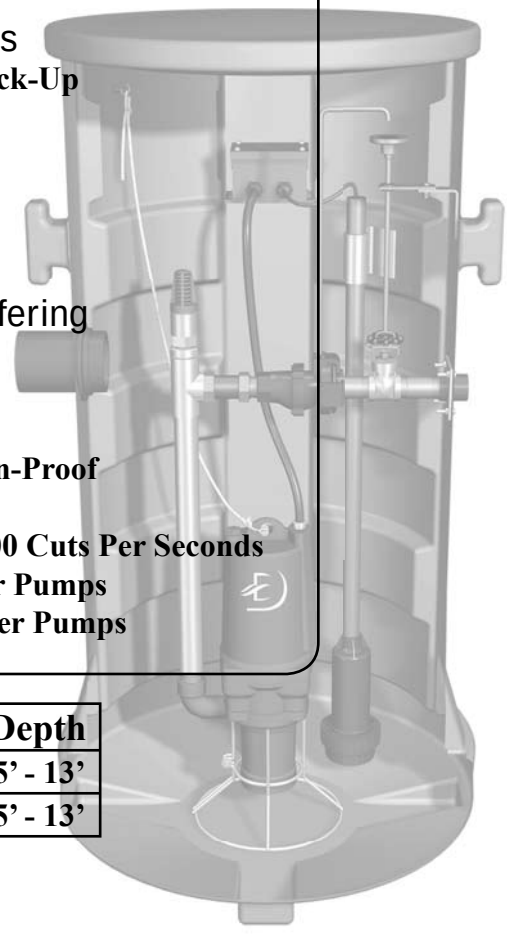


Complete Low Pressure Sewer Systems Options
- **Flex Hose or Rail System Available**
- **Simplex and Duplex Systems Available**
- **Multiple Basin Diameters and Basin Depths Available**
- **Extensive Retro Fit Kit Offering**

Level Control Options
- **Pressure Activated**
- **Float Activated**

Superior Control Panel Options
- **Remote Alarm with Battery Back-Up**
- **Digital Display Center**
- **Seal Fail Alarm**
- **Thermal Overload Alarm**
- **Generator Receptacle**

Submersible Grinder Pump Offering
- **Semi-Positive Displacement**
- **Single Seal Centrifugal**
- **Dual Seal Centrifugal**
- **Dual Seal Centrifugal Explosion-Proof**
- **Oil Filled Motors**
- **Cutter Designs Exceeding 10,000 Cuts Per Seconds**
- **UL Listed Submersible Grinder Pumps**
- **CSA Listed Submersible Grinder Pumps**



Model	Description	Control	Depth
DGR12-D1C20-21 (Rail)	2hp 230v Centrifugal	DFC	5' - 13'
DGF12-D1C20-21 (Rail)	2hp 230v Prog. Cavity	DFC	5' - 13'

Simplex Grinder Basin - 24" Dia.
Duplex Grinder Basin - 30" Dia.

Jackel Basins

Model	Dimensions	Capacity
SF22A	18X24	22.5 Gallons
SF30	18X30	30 Gallons
SF24X36	24X36	72 Gallons
SF30X36	30X36	110 Gallons

Basin 18 x 24 SF-22A	SEW14005
LId 18" Split	SEW14020
18x30 Basin Complete	SEW14028
Basement Sump 24" (No Lid)	SEW14042
Basement Sump Lid 24"	SEW14043
Bolt Kit (Cover)	SEW14038
Hub Kit (4" Pipe Adpt)	SEW14040

Rail packages available in 1-1/4", 1-1/2", 2", 3", and 4" discharge sizes. Jackel's Universal Rail System is noncorrosive stainless steel and schedule 80 PVC discharge piping. Stainless Steel available for discharge piping.

Guide Rail Package Simplex/Duplex

JKS 125	1.25"
JKS 150	1.50"
JKS 200	2"
JKS 300	3"
JKS 400	4"

JACKEL ECO-SYSTEMS

Custom Fiberglass Basins available in 18", 24", 30", 36", 42", 48" and 60" dia.

Access Doors

Type: APS (single leaf)
Loading: Pedestrian 150lbs. / 300lbs.
Frame: Angle non-watertight / watertight
Material: Aluminum; Steel; Stainless Steel

Sizes

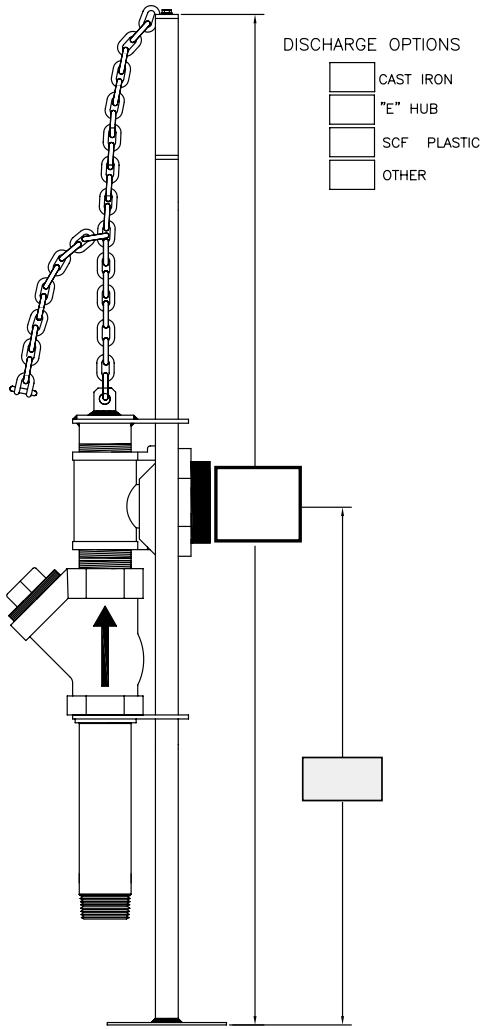
24x24	30x30	36x36
24x24	30x36	36x48
24x36	30x48	42x42

Type: APD (double leaf)
Loading: Pedestrian 150lbs. / 300lbs.
Frame: Angle non-watertight / watertight
Material: Aluminum; Steel; Stainless Steel

Sizes

30x48	36x60	48x54
30x54	42x48	48x72
36x48	48x48	50x60

RAIL ONLY ORDER



UNIT ASSEMBLED ON PUMP SIDE COMPLETE AS SHOWN. TOP RAIL SUPPORT AND TOP RAIL BOSSES TACK WELDED IN POSITION.

CUSTOMER	
PART No.	
P.O. NUMBER	
QUOTED BY:	
ORDER DATE:	
SHIP DATE:	
LEAD TIME:	

PUMP INFORMATION REQUIRED

PUMP MFG.	
MODEL No.	

BASIN OR TANK LENGTH (REQUIRED)	
BASIN OR TANK DIAMETER OR WIDTH (OPTIONAL)	
DISCHARGE DIMENSION FROM TOP (OPTIONAL)	

DISCHARGE PIPING

PVC	✓	S.S.	

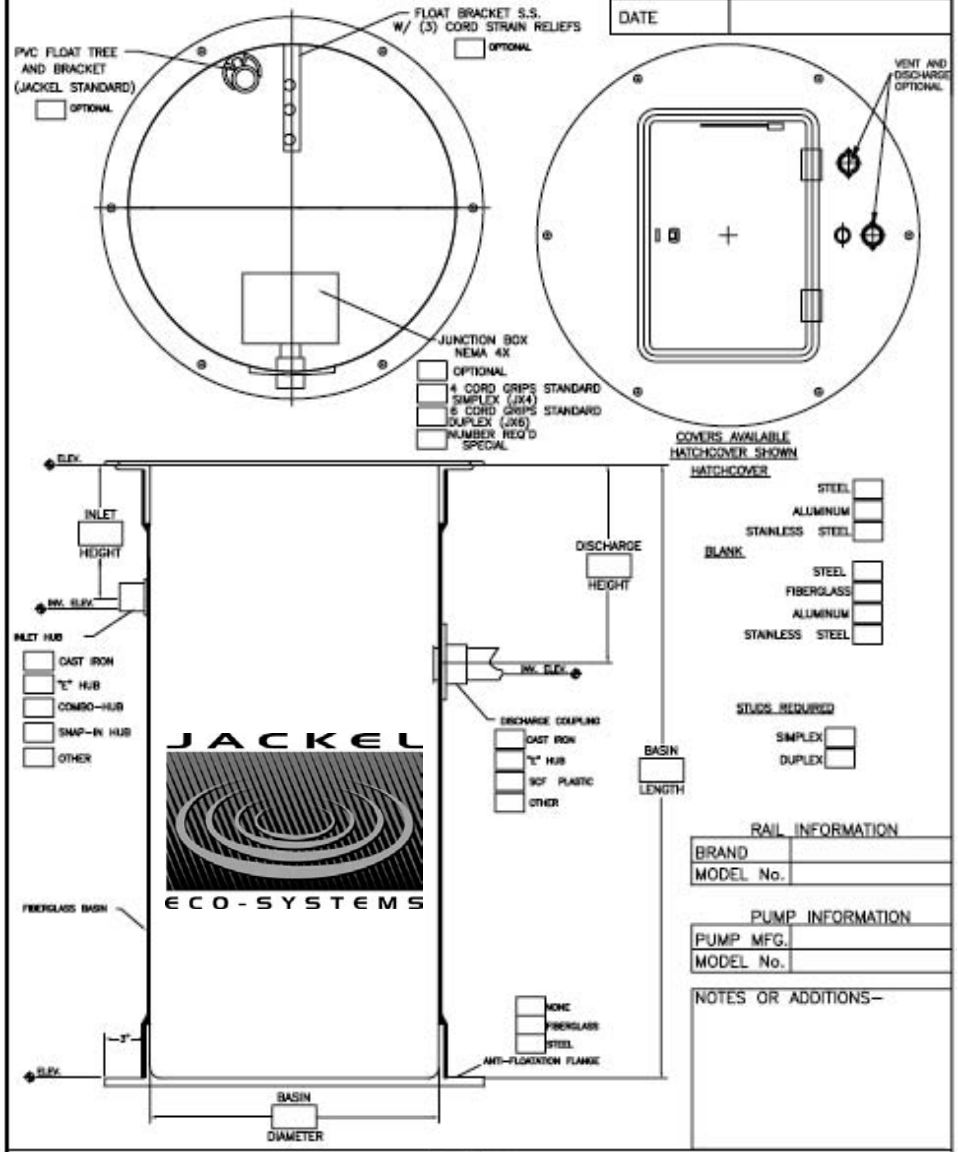
NOTES:

JACKEL ECO-SYSTEMS
574.256.5635 PHONE 574.256.6966 FAX WWW.JACKELINC.COM

JACKEL PART NUMBER

BASIN WITH ACCESSORIES

CUSTOMER	
P.O. No.	
DATE	



RAIL INFORMATION

BRAND	
MODEL No.	

PUMP INFORMATION

PUMP MFG.	
MODEL No.	

NOTES OR ADDITIONS–

JACKEL
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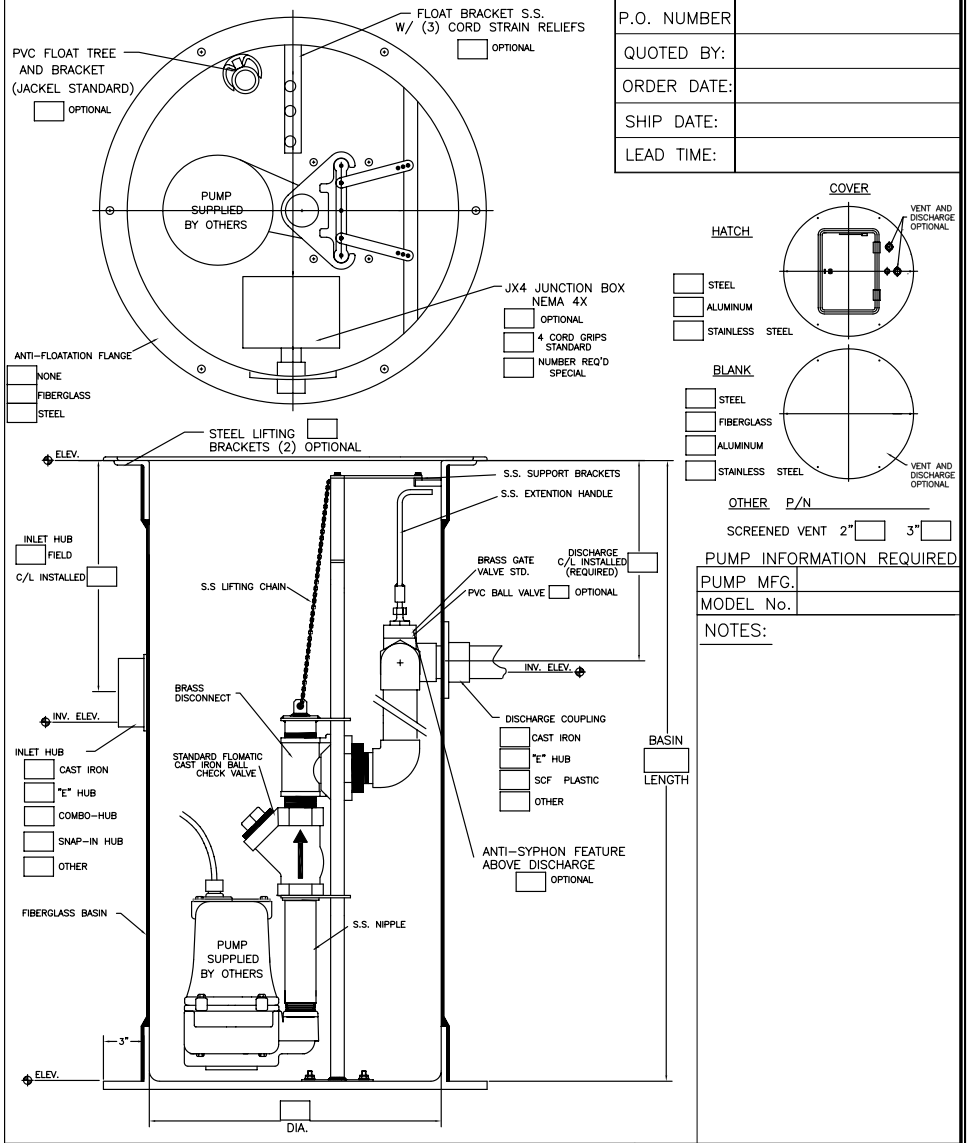
SIMPLEX RAIL SYSTEM

CUSTOMER	
PART No.	JRJKS– –S– –
P.O. NUMBER	
QUOTED BY:	
ORDER DATE:	
SHIP DATE:	
LEAD TIME:	



COVER

HATCH
STEEL
ALUMINUM
STAINLESS STEEL

BLANK
STEEL
FIBERGLASS
ALUMINUM
STAINLESS STEEL

OTHER P/N

SCREENED VENT 2" 3"

PUMP INFORMATION REQUIRED

PUMP MFG.	
MODEL No.	

NOTES:

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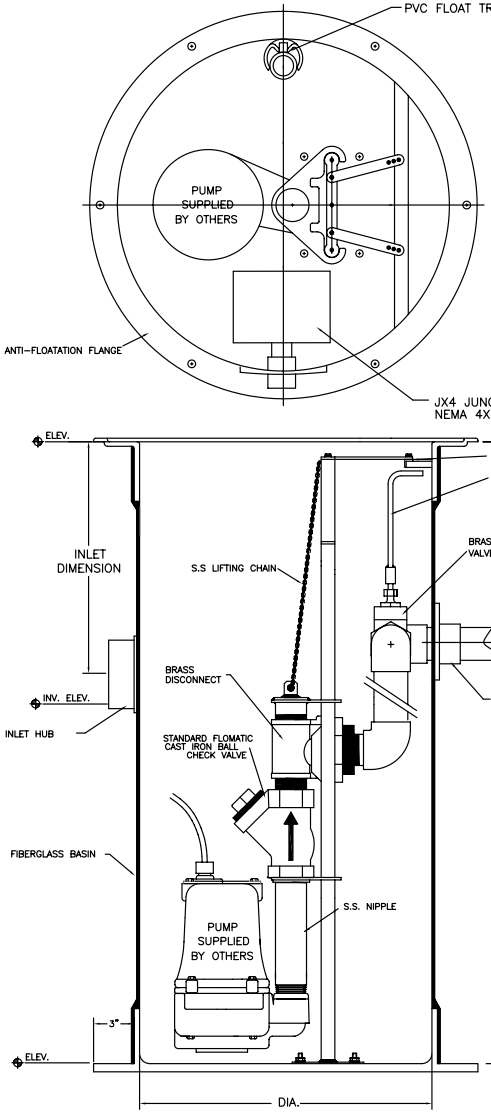
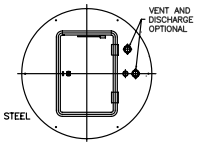
JACKEL PART NUMBER
JRJKS– –S– –

TYPICAL SIMPLEX PUMP STATION
FOR PUMPS WITH 1 1/4", 1 1/2" AND 2" DISCHARGE

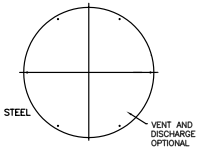


COVERS AVAILABLE

HATCH
STEEL
ALUMINUM
STAINLESS STEEL



BLANK
STEEL
FIBERGLASS
ALUMINUM
STAINLESS STEEL



QTY.	DESCRIPTION
	BASIN
1	FILAMENT WOUND FIBERGLASS BASIN
1	ANTI–FLOAT OR BASEPLATE OPTIONAL
1 SET	STAINLESS STEEL STUDS (4)
	GUIDE RAIL PACKAGE
1 SET	STAINLESS 3/4" SCH.40 GUIDE RAILS
1 SET	STAINLESS GUIDE PLATE
1	BRASS DISCONNECT
1	STAINLESS DROP–PIPE TO ATTACH PUMP
1	STAINLESS STEEL LIFT OUT CHAIN
1 SET	STAINLESS WALL MOUNTING BRACKETS
	WITH STAINLESS HARDWARE
	INLET & DISCHARGE PIPING
1	FLEXIBLE DISCHARGE HUB
1	4" FLEXIBLE INLET HUB
AS REQ'D	SCH.80 PVC PIPING & FITTINGS ON
	DISCHARGE SIDE
	VALVES
1	EPOXY COATED CAST IRON BALL
	CHECK VALVE INSTALLED PUMP SIDE
1	BRASS GATE VALVE/STAINLESS EXTENSION
	HANDLE, INSTALLED DISCHARGE SIDE
	ADDITIONS
1	PVC FLOAT TREE
1	NEMA 4X JUNCTION BOX
	OPTIONAL VALVES
	SCH.80 PVC BALL CHECK VALVE
	BRASS SWING CHECK VALVE
	SCH.80 PVC BALL SHUT–OFF VALVE
	SCH.80 PVC TRUE UNION BALL SHUT–OFF VALVE
	OPTIONAL HUBS AND FLANGES
	CAST IRON
	STAINLESS STEEL
	PARALLEL
	ACCESSORIES
	MODEL #2900 FLOAT SWITCHES
	ADAPTOR FOR VENT PROVISION
	ANTI–SYPHON OPTION

JACKEL
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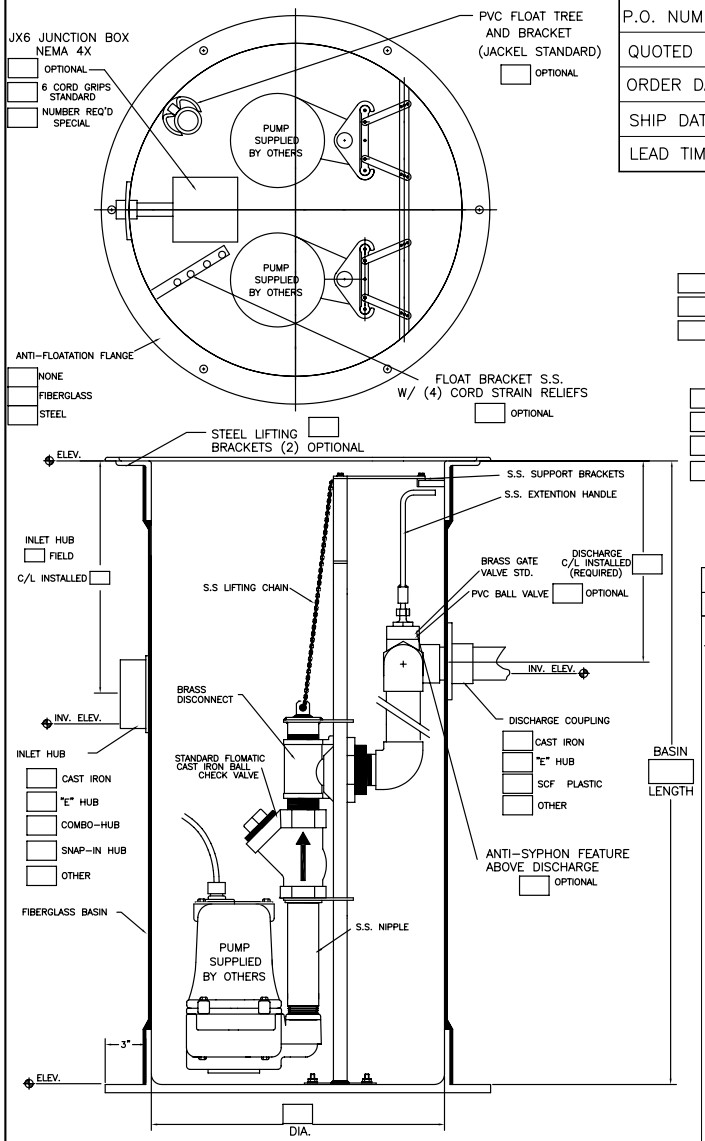
JACKEL PART NUMBER
JRJKS– 125/150/200 –S–FB–JX4 OPTIONAL

DUPLEX RAIL SYSTEM

CUSTOMER	
PART No.	JRJKS– –D– –
P.O. NUMBER	
QUOTED BY:	
ORDER DATE:	
SHIP DATE:	
LEAD TIME:	



COVER

HATCH
STEEL
ALUMINUM
STAINLESS STEEL
VENT AND DISCHARGE OPTIONAL

BLANK
STEEL
FIBERGLASS
ALUMINUM
STAINLESS STEEL
VENT AND DISCHARGE OPTIONAL

OTHER P/N

SCREENED VENT 2" 3"

PUMP INFORMATION REQUIRED

PUMP MFG.	
MODEL No.	

NOTES:

JACKEL
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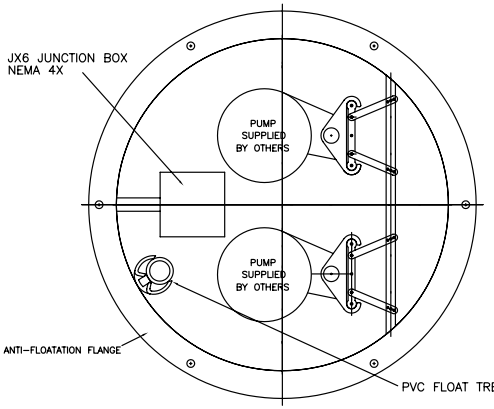
JACKEL PART NUMBER
JRJKS– –D– –

TYPICAL DUPLEX PUMP STATION

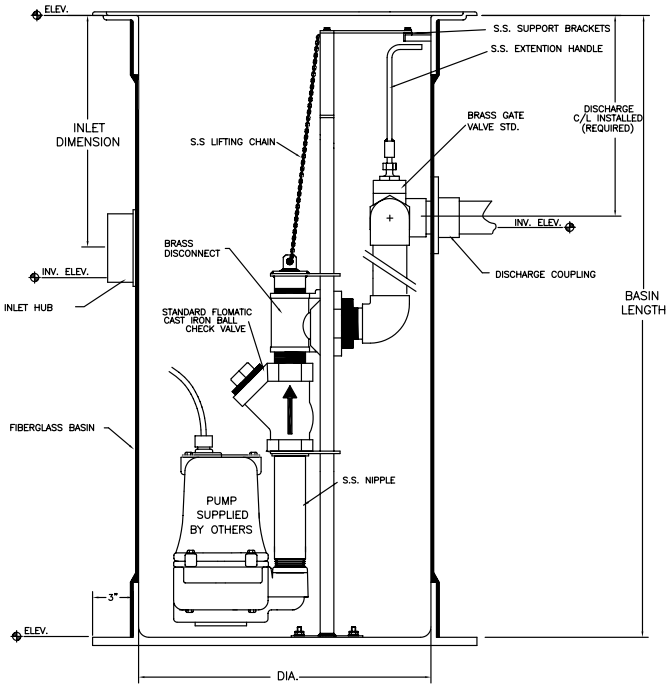
FOR PUMPS WITH 1 1/4", 1 1/2" AND 2" DISCHARGE



COVERS AVAILABLE

HATCH
STEEL
ALUMINUM
STAINLESS STEEL
VENT AND DISCHARGE OPTIONAL

BLANK
STEEL
FIBERGLASS
ALUMINUM
STAINLESS STEEL
VENT AND DISCHARGE OPTIONAL



QTY.	DESCRIPTION
	BASIN
1	FILAMENT WOUND FIBERGLASS BASIN
1	ANTI–FLOAT OR BASEPLATE OPTIONAL
2 SETS	STAINLESS STEEL STUDS (8)
	GUIDE RAIL PACKAGE
2 SETS	STAINLESS 3/4" SCH.40 GUIDE RAILS
2 SETS	STAINLESS GUIDE PLATE
2	BRASS DISCONNECT
2	STAINLESS DROP–PIPE TO ATTACH PUMP
2	STAINLESS LIFT OUT CHAINS
2 SETS	STAINLESS WALL MOUNTING BRACKETS
	WITH STAINLESS HARDWARE
	INLET & DISCHARGE PIPING
1	FLEXIBLE DISCHARGE HUB
1	4" FLEXIBLE INLET HUB
AS REQ'D	SCH.80 PVC PIPING & FITTINGS ON
	DISCHARGE SIDE
	VALVES
2	EPOXY COATED CAST IRON BALL
	CHECK VALVE INSTALLED PUMP SIDE
2	BRASS GATE VALVE/STAINLESS EXTENSION
	HANDLE, INSTALLED DISCHARGE SIDE
	ADDITIONS
1	PVC FLOAT TREE
1	NEMA 4X JUNCTION BOX
	OPTIONAL VALVES
	SCH.80 PVC BALL CHECK VALVE
	BRASS SWING CHECK VALVE
	SCH.80 PVC BALL SHUT–OFF VALVE
	SCH.80 PVC TRUE UNION BALL SHUT–OFF VALVE
	OPTIONAL HUBS AND FLANGES
	CAST IRON
	STAINLESS STEEL
	PARALLEL
	ACCESSORIES
	MODEL #2900 FLOAT SWITCHES
	ADAPTOR FOR VENT PROVISION
	ANTI–SYPHON OPTION

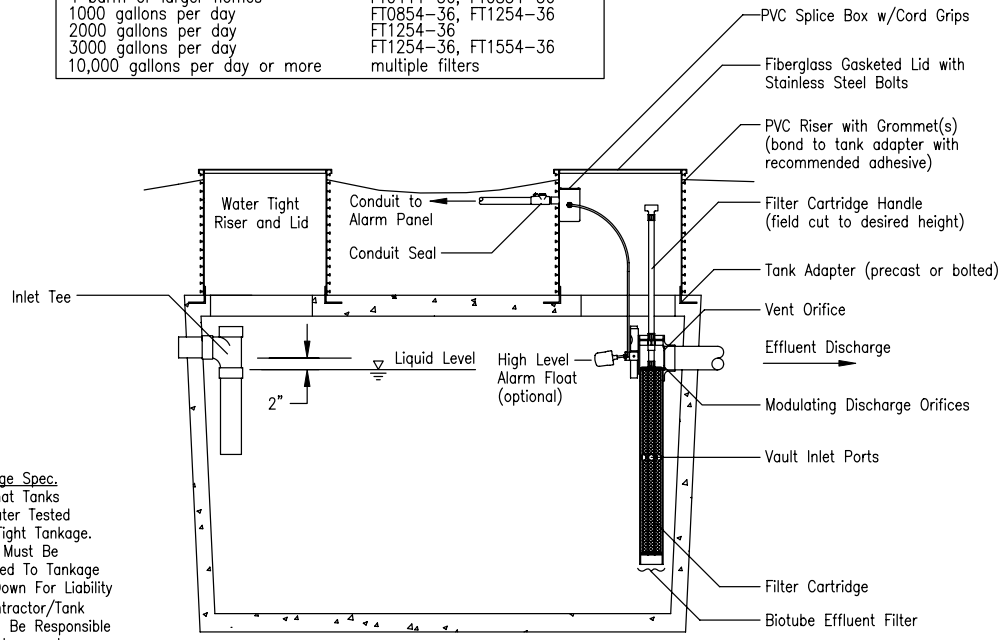
JACKEL
574.256.5635 PHONE 574.256.6966 FAX WWW.JACKELINC.COM

JACKEL PART NUMBER
JRJKS– 125/150/200 –D–FB–JX4 OPTIONAL

Orenco Systems®
Incorporated

Generalized Applications Chart

Source	Recommended Filters
2 or 3 bdrm single family homes	FT0444-36
4 bdrm or larger homes	FT0444-36, FT0854-36
1000 gallons per day	FT0854-36, FT1254-36
2000 gallons per day	FT1254-36
3000 gallons per day	FT1254-36, FT1554-36
10,000 gallons per day or more	multiple filters


PVC Splice Box w/Cord Grips
Fiberglass Gasketed Lid with Stainless Steel Bolts
PVC Riser with Grommet(s) (bond to tank adapter with recommended adhesive)
Water Tight Riser and Lid
Conduit to Alarm Panel
Conduit Seal
Filter Cartridge Handle (field cut to desired height)
Tank Adapter (precast or bolted)
Inlet Tee
Vent Orifice
Liquid Level
High Level Alarm Float (optional)
2"
Effluent Discharge
Modulating Discharge Orifices
Vault Inlet Ports
Filter Cartridge
Biotube Effluent Filter

Water Tight Tankage Spec.
It Is Necessary That Tanks Be Vacuum Or Water Tested To Certify Water Tight Tankage. PVC Acces Risers Must Be Water Tight, Epoxied To Tankage And Lids Bolted Down For Liability Consideration. Contractor/Tank Manufacturer Shall Be Responsible For Repair Or Replacement Of Tanks With Leaks or Defects.

Patents # 4,439,323 & 5,492,635
Foreign Patents Pending
©1997, Orenco Systems, Inc.

Note: 12"–15" filters available with slide rail option. Use of multiple filters or deeper versions of standard filters to acheive desired screen area is an option at any flow. Many situations require special designs; modifications of standard filter dimensions are accommodated easily.

Septic Tank with 4" Dia. Biotube® Effluent Filter

Biotube Effluent Filter

DRAWN jdu | SCALE | DATE 12/20/04 | APPROVED

7125 East Pickard Road
P. O. Box 309
Mt. Pleasant, MI 48804-0309
ph-989-773-9938
fax-989-772-3415

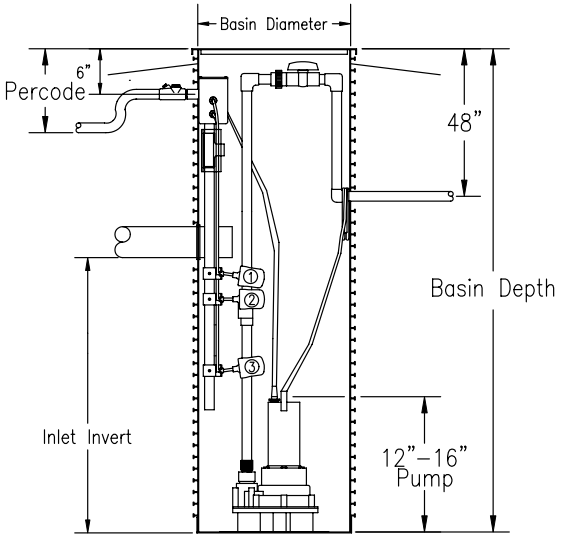
MILAN Engineered Systems

NO	REVISION	DATE	BY
1.	12/04		jdu
2.			
3.			
4.			
5.			

SHEET 1 OF 1

DRAWING NO. F1

Orenco Systems®
Incorporated



Pump Basin
Basin Diameter _____
Basin Depth _____
Lid (Top) Elevation _____
Base Elevation _____
Inlet Invert Elevation _____
Outlet Invert Elevation _____
Float #1 (Top) Elevation _____
Float #2 Elevation _____
Float #3 Elevation _____

Pump Description
Make _____
Model _____
GPM @ TDH _____
HP _____
Voltage/Phase _____
FLA _____

Basin Capacity
18" Basin = 1.06 gal/in
24" Basin = 1.88 gal/in
30" Basin = 2.96 gal/in

Control/Alarm
Model (requirements)
_____
_____
_____

PBE Pump Basin Detail

DRAWN jdu | SCALE | DATE 12/20/04 | APPROVED

7125 East Pickard Road
P. O. Box 309
Mt. Pleasant, MI 48804-0309
ph-989-773-9938
fax-989-772-3415

MILAN Engineered Systems

NO	REVISION	DATE	BY
1.	12/04		jdu
2.			
3.			
4.			
5.			

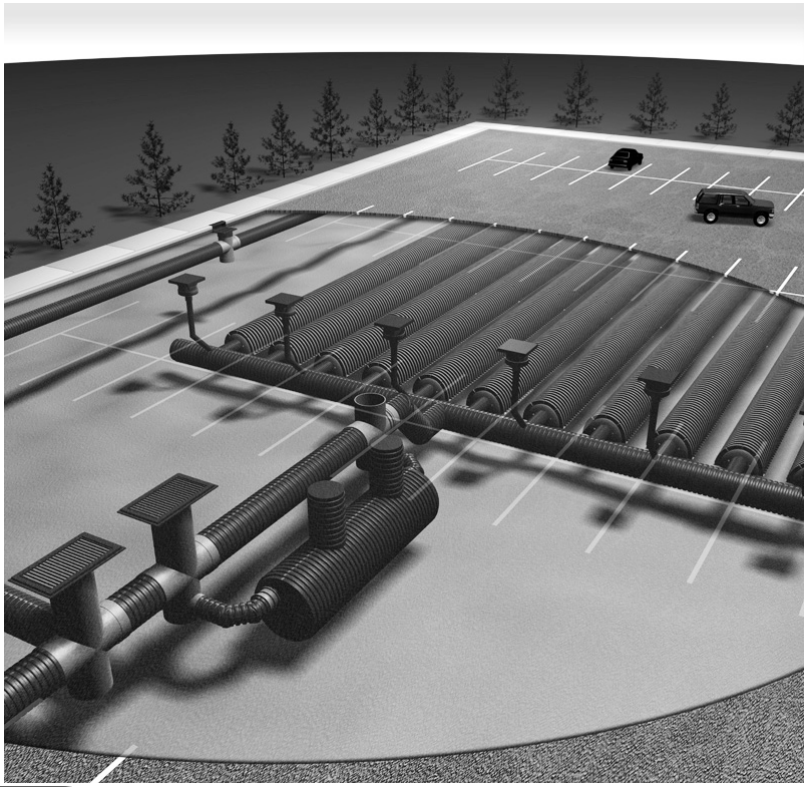
SHEET 4 OF 4

DRAWING NO. B7

Subsurface Stormwater Management

StormTech Detention • Retention • Recharge

StormTech chambers are an excellent alternative for Retention Detention systems. The chambers are carefully engineered to meet the demands of subsurface storm water management applications. StormTech chambers provide optimal underground retention and detention solutions for storm water runoff.



Product Features and Benefits

The advanced features and innovative technology of StormTe chambers streamline installations while lowering overall install costs. StormTech chambers offer these unique advantages:

- Lightweight, two people can install chambers quickly and easily, saving time and money
- Extensive product research & development and rigorous testing ensure long term reliability and performance
- Versatile product design accommodates a wide range of site constraints with cost-effective system designs
- The chamber length can be cut in 6.5" (165 mm) increments reducing waste and optimizing the use of available space
- Injection molded polypropylene ensures precise control of wall thickness and product consistency
- Isolator Row – a patent pending technique to inexpensively enhance total suspended solids (TSS) removal and provide easy access for inspection and maintenance
- Corrugated Arch Design – a proven geometry for structural integrity under H-20 live loads and deep burial loads, also provides high storage capacity

Contact your Milan representative to quote your stormwater / drainage project needs.

Tank Alert® XT alarm system (Weatherproof)

The Tank Alert® XT indoor/outdoor alarm system monitors liquid level conditions in lift pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other non-potable water applications.
- Enclosure meets type 3R water-tight standards

- For indoor or outdoor use
- UL Listed for outdoor use (UL standard 2017)
- Features horn and red beacon
- 120 VAC components
- Features automatic alarm silence re-set, alarm silence switch and alarm test switch
- Includes 15 foot Sensor Float® control switch (other switches available)
- Options include: auxiliary alarm contacts, pre-mounted terminal block and 6 foot power cord

Tank Alert® I alarm system (Inside Mount)

The Tank Alert® I indoor alarm system monitors liquid level in pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other non potable applications.

- NEMA 1 enclosure for indoor use
- Automatic alarm reset
- Battery back up feature insures alarm works during power failures
- Switch mechanism operates on low voltage
- Includes 15 foot Sensor Float® control switch (other switches available)

PS Patrol™ System

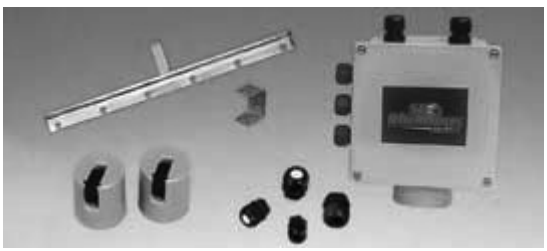
The PS Patrol™ system features a built-in high water alarm and provides a convenient location to connect all wiring required for a pumping station application.

- Pedestal rated for outdoor use
- Control switch provides alarm activation
- Convenient test/normal/silence switch mounted externally for easy operation
- Separate 120V alarm and pump circuits
- Receptacle for 120V or 230V pump and/or pump switch

SJE Rhombus Accessories

SJE-Rhombus provides a variety of accessories to complete you on-site water and wastewater installations. All SJE-Rhombus accessories are backed by a three-year limited warranty.

Junction Boxes
Cable Weights
Junction Boxes
Cord Seals
Float Brackets
Auto Dialers



MODEL 112 Control Panel

Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.

- Enclosure measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). NEMA 1 (indoor use) or NEMA 4X (outdoor or indoor use)
  **Options selected may increase enclosure size/change component layout.*
- Magnetic Motor Contactor controls pump by switching electrical lines
- HOA Switch for manual pump control (mounted on circuit board)
- Green Pump Run Indicator Light (mounted on circuit board)
- Float Switch Terminal Block (mounted on circuit board)
- Alarm and Control Fuses (mounted on circuit board)
- Alarm and Control Power Indicators (mounted on circuit board)
- Ground Lug
- Circuit Breaker (optional) for pump disconnect. branch circuit protection
- Red Alarm Beacon provides 360° visual check of alarm condition. NEMA 1 style utilizes door mounted indicator in lieu of a beacon
- Alarm Horn provides audio warning of alarm condition (83-85 db)
- Exterior Alarm Test/Normal/Silence Switch
- Horn Silence Relay (mounted on circuit board)

OPTIONS

1A	Red beacon only / no audio (select 1E if floats included)
1C	Horn only / no visual (select 1E if floats included)
1E	Alarm float
3A	Alarm flasher
★3B	Manual alarm reset
★4A	Low level cutout (select option 4D if floats included)
★4B	Red low-level indicator & alarm (select 4A also)
4D	Low-level float
★5A	Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads)
★★5E	Seal failure circuit & red indicator (2 wire)
6A	Auxiliary alarm contact, form C
★8A	Elapsed time meter
★8C	Event (cycle) counter
★★9_A	Pump overload specify amperage after # 9 followed by "A". Example: 912A = 12 amp pump. ★★ 0-25 FLA ★★ 25-30 FLA
10E	Lockable latch - NEMA 4X
10E	Lockable latch - NEMA 1
★10F	Lightning arrester
★10K	Anti-condensation heater
11C	NEMA 1 alarm panel must select option 6A
11D	NEMA 4X alarm panel must select option 6A
14B	Main disconnect (rotary style, mounted through door) non-fused 0-20 FLA 20-30 FLA
15A	Control / alarm circuit breaker. Does not include the circuit board as in standard.
16A	10' cord in lieu of 20' (per float)
16B	15' cord in lieu of 20' (per float)
16C	30' cord in lieu of 20' (per float)
16D	40' cord in lieu of 20' (per float)
17A	SJE SignalMaster® / mounting strap ● (per float)
17B	SJE SignalMaster® / externally weighted ● (per float)
17C	Sensor Float® / internally weighted ▲ (per float)
17D	Sensor Float® / externally weighted ▲ (per float)
17E	Sensor Float® Mini / pipe clamp ▲ (per float)
17F	Sensor Float® Mini / externally weighted ▲ (per float)
19T	Test/Off/Automatic switch & pump run light through door mounted
19U	Hand/Off/Automatic switch & pump run light through door mounted
19X	Door mounted pump run indicator
21A	SJE PumpMaster® in lieu of on/off switches ●
21B	SJE PumpMaster® Plus in lieu of on/off switches ●
21C	Super Single® in lieu of on/off switches ▲
21D	Double Float® in lieu of on/off switches ▲

● Mechanically-activated ▲ Mercury-activated

MODEL 122 Control Panel

Single phase, duplex alternating pump control w/ override.

The Model 122 control panel is designed to alternately control two 120, 208, or 240 VAC single phase pumps in water and sewage installations. The alternating action equalizes pump wear. In addition to the alternating pump control, this system provides override control should either pump fail. If an alarm condition occurs, an alarm switch activates the audio/visual alarm system.

- Enclosure measures 10 X 10 X 6 inches (25.4 X 25.4 X 15.24 cm). NEMA 1 (indoor use) or NEMA 4X (outdoor or indoor use)
  **Options selected may increase enclosure size/change component layout.*
- Magnetic Motor Contactor controls pump by switching electrical lines
- HOA Switches for manual pump control (mounted on circuit board).
- Control Circuit Board provides pump control and alternation
- Green pump Run Indicator Lights (mounted on circuit board)
- Circuit Breakers (optional) for pump disconnect. branch circuit protection
- Ground Lugs
- Float Status Indicator Lights (mounted on circuit board)
- Alarm and Control Power Indicators (mounted on circuit board)
- Auxiliary Alarm Contact, form C (mounted on circuit board)
- Red Alarm Beacon provides 360° visual check of alarm condition NEMA 1 style utilizes door mounted indicator in lieu of a beacon
- Alarm Horn provides audio warning of alarm condition (83-85 db)
- Exterior Alarm Test/Normal/Silence Switch
- Horn Silence Relay (mounted on circuit board)

OPTIONS

1A	Red beacon only / no audio (select "0" for alarm package)
1C	Horn only / no visual (select "0" for alarm package)
★★3A	Alarm flasher
★3B	Manual alarm reset
★4A	Low level cutout (select Option 4D if floats included)
4B	Red low-level indicator & alarm (select Option 4A also)
4D	Redundant off float switch
★5A	Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads)
★5E	Seal failure circuit & red indicator (2 wire)
6A	Auxiliary alarm contact, form C (included as standard)
★8A	Elapsed time meter
★8C	Event (cycle) counter
★9_A	Pump overload specify amperage after # 9 followed by "A". Example: 912A = 12 amp pump. ★0-25 FLA ★25-30 FLA
10E	Lockable latch - NEMA 4X
10E	Lockable latch - NEMA 1
★10F	Lightning arrestor (must select circuit breaker)
★★10K	Anti-condensation heater
11C	NEMA 1 alarm panel
11D	NEMA 4X alarm panel
★14B	Main disconnect (rotary style, mounted through door, non-fused) (must select circuit breaker) ★0-20 FLA (total of both pumps) ★20-60 FLA (total of both pumps)
16A	10' cord in lieu of 20' (per float)
16B	15' cord in lieu of 20' (per float)
16C	30' cord in lieu of 20' (per float)
16D	40' cord in lieu of 20' (per float)
17A	SJE SignalMaster® / pipe clamp l (per float)
17B	SJE SignalMaster® / externally weighted l (per float)
17C	Sensor Float® / internally weighted s (per float)
17D	Sensor Float® / externally weighted s (per float)
17E	Sensor Float® Mini / pipe clamp s (per float)
17F	Sensor Float® Mini / externally weighted s (per float)
19B	Lead lag selector switch
19F	Fourth float to separate alarm function from lag
19T	Test/Off/Automatic switch & pump run light through door mounted
19U	Hand/Off/Automatic switch & pump run light through door mounted
19X	Door mounted pump run indicator

● Mechanically-activated ▲ Mercury-activated

MID MICHIGAN Dosing Panel

Approved by regulators for Michigan market.

This simplex dosing panel, designed for and accepted by the Michigan market, provides customers with an effective, reliable means of controlling one single phase pump in water and sewage applications. Each system includes a 120 VAC event counter in conjunction with a motor contactor to insure accurate* cycle counts for any application.

**Testing of various systems has proven using a cycle counter in conjunction with a pump switch starting device may lead to inaccurate cycle counts. This is due to back EMF generated in certain pump applications.*

- NEMA 4X enclosure for outdoor use
- Control/alarm fuse
- 120 VAC control/alarm circuit
- Alarm beacon, horn (85 db)
- Test/Normal/Silence switch
- HOA (hand/off/auto) switch
- Circuit breaker pump protection
- Magnetic motor contactor
- Rated up to 20 FLA
- Event counter and locking latch
- Large, easy-to-use terminal blocks

OPTIONS

CP11-208 P/N 1006728 — SEW 10015

- 120 VAC pump circuit
- Pumping range 7-36 inches
- Includes one 20' PumpMaster® pump switch (start/stop) and one 20' Sensor Float® Mini control switch (alarm) with mounting clamp
- 8" x 6" x 4" enclosure
- **22 mm red door mounted indicator in lieu of beacon

CP11-208E P/N 1006403 — SEW 10020

- 120 VAC pump circuit
- No preset pumping range
- Includes three 20' Sensor Float® Mini control switches with cable weights
- 10" x 8" x 4" enclosure

CP11-208G P/N 1006729
CP11-208L P/N 1011788 without external weights

- 230 VAC pump circuit
- No preset pumping range
- Includes three 20' Sensor Float® Mini control switches with cable weights
- 10" x 8" x 4" enclosure

CP11-208H P/N 1006730
CP11-208M P/N 1011789 without external weights

- 120 VAC pump circuit
- No preset pumping range
- Low level (redundant off) pump cutout
- Includes four 20' Sensor Float® Mini control switches with cable weights
- 10" x 8" x 4" enclosure

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SJE Rhombus®

www.sjerhombus.com

Control Switches

SJE-Rhombus narrow-angle control switches accurately monitor high (normally open) or low (normally closed) liquid level conditions in water and sewage applications. Each control switch is available in various cord lengths with various mounting options to meet your needs.

Junior Super Single® Pump Switch

The Junior Super Single® pump switch provides automatic control of smaller pumps in a non-turbulent location. UL Recognized; CSA Certified.
- **Mercury-activated**
- **Controls pumps up to ½ HP at 120 VAC; 1 HP at 230 VAC**
- **Not sensitive to rotation**
- **Pumping range: 6 ½" to 19"**
- **Available with or without piggy-back plug**
- **Available for pump up or pump down applications**
- **Recommended for use in non-turbulent applications**

Double Float® Pump Switch

The Double Float® pump switch consists of two floats. Each float contains a heavy duty mercury switch. One of the two floats contains a holding relay which enables the floats to function is series. This switch provides automatic control of pumps in non-potable water and sewage applications. UL Recognized; CSA Certified.

- **Mercury-activated**
- **Controls pumps up to 1HP at 120 VAC; 2 HP at 230 VAC**
- **For confined applications requiring an accurate pumping range**
- **Not sensitive to turbulence**
- **Pumping range: 1 ¾" to 48" (wider ranges available)**
- **Available for pump up or pump down applications**
- **Available with or without piggy-back plug**

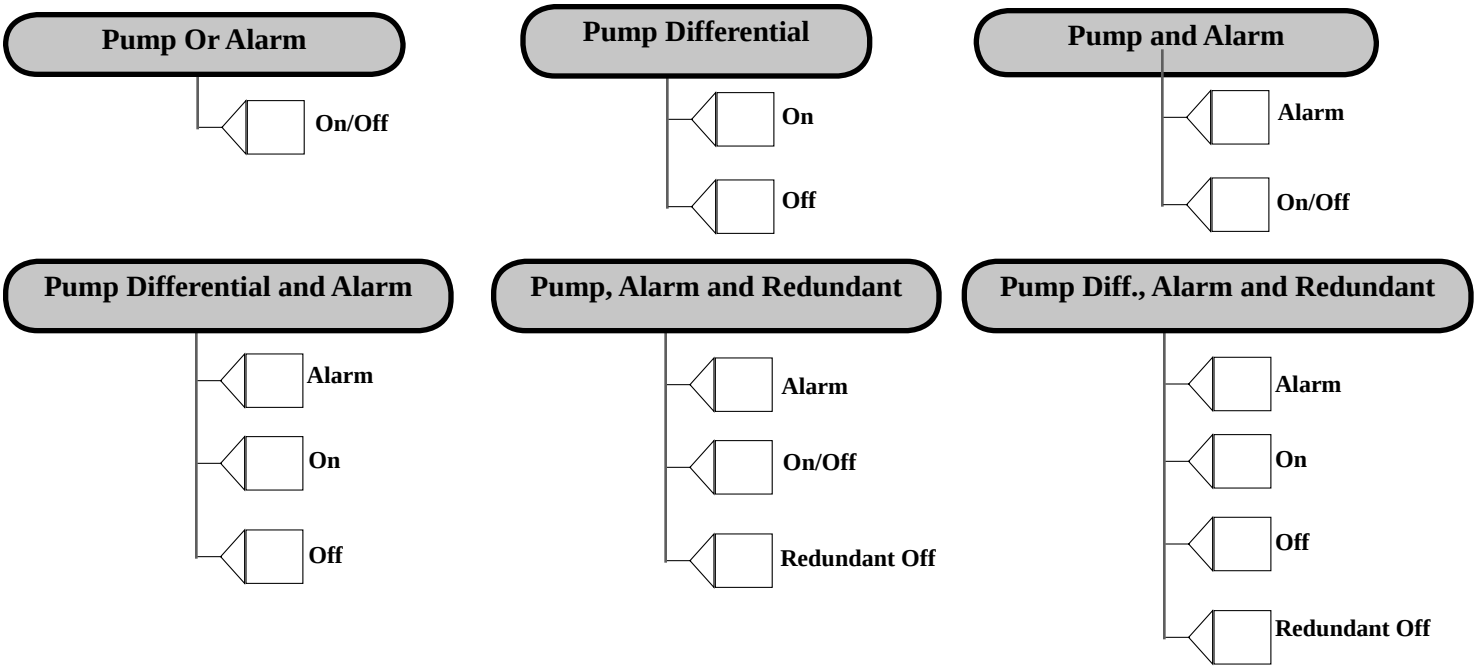
Panels, Alarms, Accessories

Panel Simplex 115V 2 Float (MICH CP11-208)	SEW10015
Panel Simplex 115V 3 Float (MICH CP11-208E)	SEW10020
Panel Simplex, 115/230, RO, 4 Float, (15 amp) 1121W114H4ABD8C10E	SEW10030
Simplex, 115V, Timed Dose, RO, 4 Float	SEW10032
PS Patrol PSP1206H 115v	SEW10147
PS Patrol 230v	SEW10148
Tank Alert XT w/ Float (Weatherproof)	SEW10144
Tank Alert w/ Float TAAB-01H (Inside Mount)	SEW10145
Cable Connect 1/2" RD	SEW10170
Weight Cable SJE	SEW10190
4 Float SS Bracket W/Mount	SEW11150

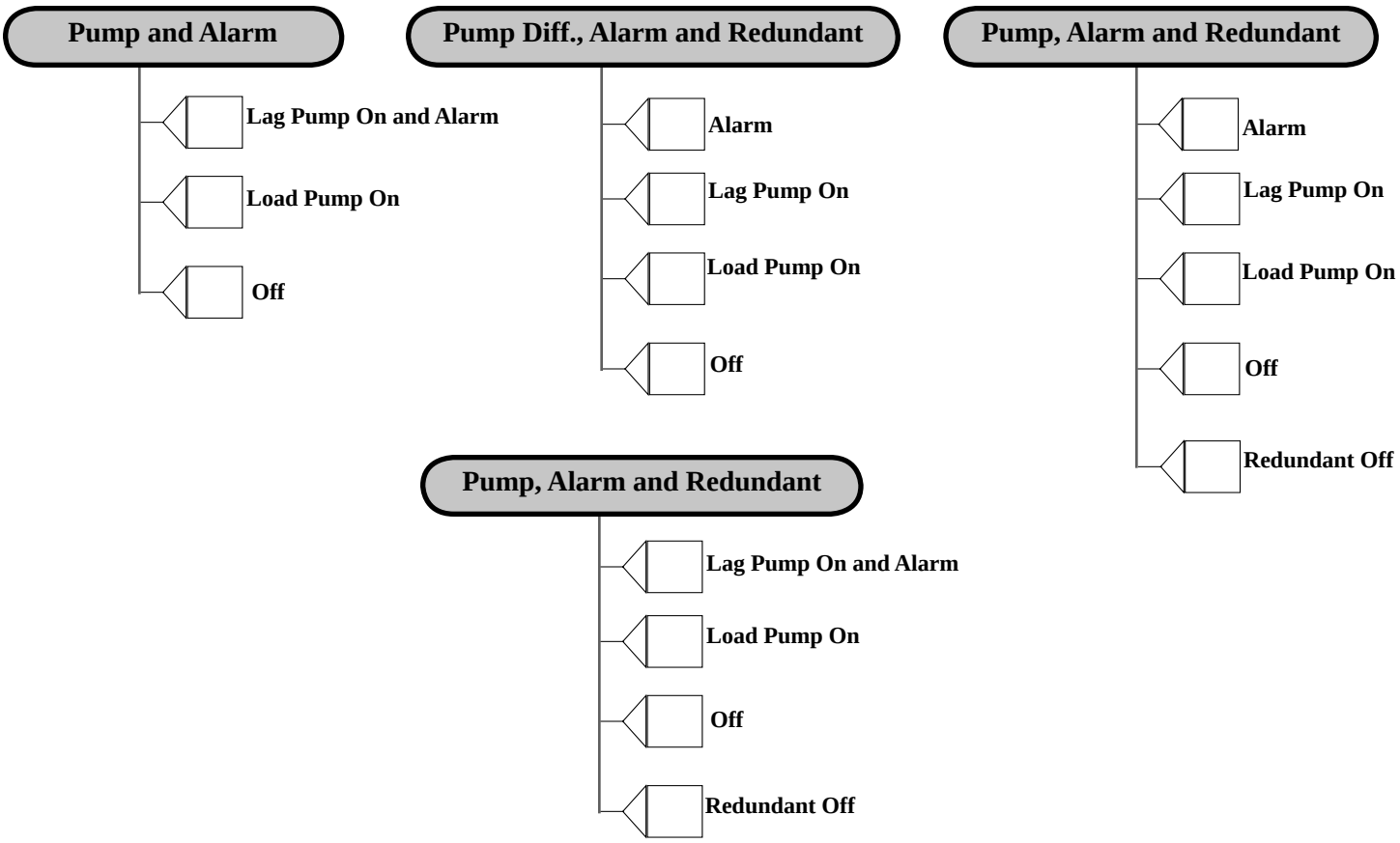
Pump and Alarm Floats

20VM1WP Vertical Pump Float	Dwn	115v	13A	SEW10075
15PMD1WP Pump Float	Dwn	115v	13A	SEW10080
20JSD1WP 20' Pump Float	Dwn	115v	13A	SEW10082
20JSD2WP 20' Pump Float	Dwn	230v	8A	SEW10081
20SSD2WP 20' Pump Float	Dwn	230v	12A	SEW10083
15PMD2WP Pump Float	Dwn	230v	15A	SEW10085
15PMU1WP Pump Float	Up	115v	13A	SEW10090
15PMU2WP Pump Float	Up	230v	13A	SEW10095
15PMPD1WP Pump Float	Dwn	115v	15A	SEW10100
15PMPD2WP 230 15' Down	Dwn	230v	15A	SEW10105
20DFD1WP Double Float	Dwn	115v	15A	SEW10123
20DFD2WP Double Float	Dwn	230v	12A	SEW10125
Sensor Float 15PCNO	(for controls)		5A	SEW10139
Sensor Float 30SWENO	(for controls)		5A	SEW10140

Simplex Float Arrangements



Duplex Float Arrangements



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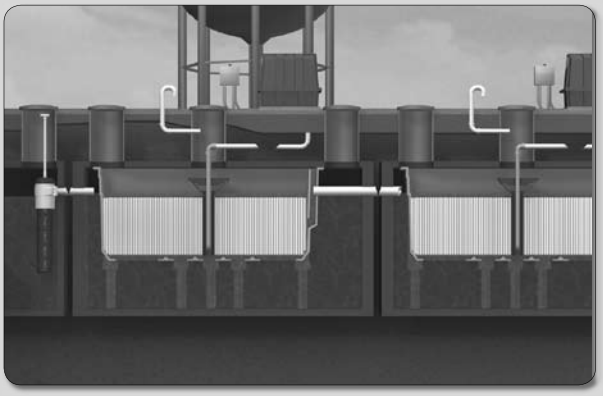
HighStrengthFAST wastewater treatment systems

Commercial facilities are among the most challenging wastewater projects, often having BOD and FOG levels that are significantly higher than standard residential sewage. HighStrengthFAST® provides proven, robust treatment while offering the same simple installation and maintenance as a standard FAST® system.

- 600+ high-strength commercial installations
- Available for high BOD, TSS and Nitrogen reduction
- The ideal system for restaurants, office buildings, strip malls, trailer parks, schools and other commercial properties.



- Residential
- Industrial
- Marine
- Commercial
- Municipal
- Decentralized

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Valves

Check Valves

1” PVC Check Valve SxS KBI	SEW22240
1.25” PVC Check Valve SxS KBI	SEW22250
1.50” PVC Check Valve SxS KBI	SEW22260
2” PVC Check Valve SxS KBI	SEW22270
2” PVC Check Valve SxS AG	SEW13023
2” PVC Single Union Ball SxS	VAL02520
2” PVC Combo Valve/Check/Union	SEW02300
1.50” PVC Swing Check Comp	SEW13010
2” PVC Swing Check Comp	SEW13015
1.50” Bronze Swing Check Threaded	VAL04220
2” Bronze Swing Check Threaded	VAL04250
4” Back Flow Preventor PVC	SEW13030

Ball Valves PVC

3/4” PVC Ball Valve SxS	VAL02306
1” PVC Ball Valve SxS	VAL02308
1.25” PVC Ball Valve SxS	VAL02310
1.50” PVC Ball Valve SxS	VAL02512
2” PVC Ball Valve SxS	VAL02316
3” PVC Ball Valve SxS	VAL02318
4” PVC Ball Valve SxS	VAL02320
3/4” PVC Ball Valve Thd	VAL25807
1” PVC Ball Valve Thd	VAL25810
1.25” PVC Ball Valve Thd	VAL25812
1.50” PVC Ball Valve Thd	VAL25814
2” PVC Ball Valve Thd	VAL25816
1” TU PVC Ball Valve SxS	ITUV100SE (AmG)
1.25” TU PVC Ball Valve SxS	ITUV125SE (AmG)
1.50” TU PVC Ball Valve SxS	ITUV150SE (AmG)
2” TU PVC Ball Valve SxS	ITUV200SE (AmG)
3” TU PVC Ball Valve SxS	ITUV300SE (AmG)
4” TU PVC Ball Valve SxS	ITUV400SE (AmG)

Butterfly Valves

3” PVC Butterfly Valve	PBFV3 (AmG)
4” PVC Butterfly Valve	PBFV4 (AmG)
6” PVC Butterfly Valve	PBFV6 (AmG)

PVC Compression Coupling

1.25” PVC Comp Cplg	SEW13510
1.50” PVC Comp Cplg	SEW13515
2” PVC Comp Cplg	SEW13520
3” PVC Comp Cplg	SEW13525
4” PVC Comp Cplg	SEW13530

PVC Pressure Fittings - Schedule 40

Male Adapter

3/4”	PVC01502
1”	PVC01505
1.25”	PVC01515
1.5”	PVC01520
2”	PVC01525
2.50”	436-025
3”	PVC01535
4”	436-040
6”	PVC01550

Female Adapter

3/4”	PVC02005
1”	PVC02010
1.25”	PVC02015
1.50”	PVC02020
2”	PVC02025
2.50”	435-025
3”	PVC02035
4”	PVC02040
6”	PVC02060

Bushing

.75”x.50”	PVC03010
1”x.75”	PVC03030
1.25”x.75”	PVC03050
1.25”x1”	PVC03060
1.50”x.75”	PVC03080
1.50”x1”	PVC03090
1.50”x1.25”	PVC03100
2”x.75”	PVC03110
2”x1”	PVC03120
2”x1.25”	PVC03130
2”x1.50”	PVC03140
2.50”x1”	437-289
2.50”x1.25”	437-290
2.50”x1.50”	437-291
2.50”x2”	PVC03158
3”x1”	PVC03205
3”x1.25”	437-336
3”x1.50”	PVC03220
3”x2”	PVC03230
3”x2.50”	PVC03232
4”x2”	PVC03280
4”x2.50”	437-421
4”x3”	PVC03300
6”x2”	PVC03327
6”x3”	PVC03328
6”x4”	PVC03330

Cap - Slip

3/4”	PVC05015
1”	PVC05020
1.25”	PVC05025
1.5”	PVC05030
2”	PVC05035
2.50”	447-025
3”	PVC05045
4”	PVC05047
6”	PVC05060

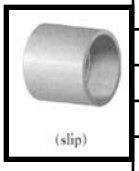
Cap - Threaded

3/4”	PVC06015
1”	PVC06020
1.25”	PVC06025
1.5”	PVC06030
2”	PVC06035
2.50”	448-025
3”	448-030
4”	PVC06065
6”	448-060

Cross

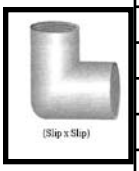
3/4”	420-007
1”	PVC07508
1.25”	PVC07510
1.5”	PVC07512
2”	PVC07516
2.50”	420-025
3”	PVC07524
4”	PVC07532

Coupling



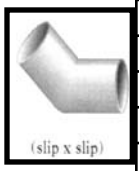
3/4”	PVC07015
1”	PVC07020
1.25”	PVC07025
1.5”	PVC07030
2”	PVC07035
2.50”	PVC07040
3”	PVC07045
4”	PVC07050
6”	PVC07060

Elbow 90



3/4”	PVC08015
1”	PVC08020
1.25”	PVC08025
1.5”	PVC08030
2”	PVC08035
2.50”	406-025
3”	PVC08045
4”	PVC08050
6”	PVC08070

Elbow 45



3/4”	PVC11505
1”	PVC11510
1.25”	PVC11515
1.5”	PVC11520
2”	PVC11525
2.50”	PVC11530
3”	PVC11535
4”	PVC11540
6”	PVC11560

Plug - Thread

3/4”	PVC11895
1”	PVC11900
1.25”	450-012
1.5”	PVC11905
2”	PVC11920
2.50”	450-025
3”	PVC11930
4”	PVC11940
6”	PVC11944

Tee

3/4”	PVC12020
1”	PVC12030
1.25”	PVC12040
1.5”	PVC12050
2”	PVC12060
2.50”	PVC12070
3”	PVC12080
4”	PVC12090
6”	PVC12095

Union

3/4”	PVC16045
1”	PVC16050
1.25”	PVC16055
1.5”	PVC16060
2”	PVC16065
2.50”	497-025
3”	497-030
4”	497-040
6”	497-060

PVC Pressure Fittings - Schedule 80

Male Adapter

(MIPT x slip)

3/4”	836-007
1”	836-010
1.25”	836-012
1.5”	PVD03124
2”	PVD03132
2.50”	836-025
3”	PVD03134
4”	836-040
6”	836-060

Female Adapter

(slip x FIPT)

3/4”	835-007
1”	835-010
1.25”	PVD03010
1.50”	835-015
2”	835-020
2.50”	835-025
3”	835-030
4”	835-040
6”	835-060

Bushing

(sp x slip)

.75”x.50”	837-101
1”x.75”	837-131
1.25”x.75”	837-167
1.25”x1”	837-168
1.50”x.75”	837-210
1.50”x1”	837-211
1.50”x1.25”	837-212
2”x.75”	837-248
2”x1”	837-249
2”x1.25”	837-250
2”x 1.50”	837-251
2.50”x1”	837-289
2.50”x1.25”	837-290
2.50”x 1.50”	837-291
2.50”x2”	837-292
3”x1”	837-335
3”x1.25”	837-336
3”x1.50”	837-337
3”x2”	837-338
3”x2.50”	837-339
4”x1.50”	838-419
4”x2”	838-420
4”x2.50”	838-421
4”x3”	838-422
6”x2”	838-528
6”x3”	838-530
6”x4”	838-532

Cap - Slip

(slip)

3/4”	847-007
1”	847-010
1.25”	847-012
1.5”	847-015
2”	847-020
2.50”	847-025
3”	847-030
4”	847-040
6”	847-060

Cap - Thd

(FIPT)

3/4”	848-005
1”	848-010
1.25”	848-012
1.5”	848-015
2”	848-020
2.50”	848-025
3”	848-030
4”	848-040

Cross

(slip)

3/4”	820-007
1”	820-010
1.25”	820-012
1.5”	820-015
2”	820-020
2.50”	820-025
3”	820-030
4”	820-040

Elbow 90

(Slip x Slip)

3/4”	806-007
1”	PVD10008
1.25”	806-012
1.5”	PVD10012
2”	PVD10016
2.50”	806-025
3”	PVD10020
4”	806-040
6”	806-060

Elbow 45

(slip x slip)

3/4”	850-007
1”	850-010
1.25”	850-012
1.5”	850-015
2”	850-020
2.50”	850-025
3”	PVD18003
4”	850-040

Coupling

(slip)

3/4”	829-007
1”	829-010
1.25”	829-012
1.5”	829-015
2”	PVD06016
2.50”	829-025
3”	829-030
4”	829-040
6”	829-060

Plug - Thd

(MIPT)

3/4”	817-007
1”	817-010
1.25”	817-012
1.5”	817-015
2”	817-020
2.50”	817-025
3”	PVD18003
4”	817-040

Tee

(slip x slip x slip)

3/4”	801-007
1”	801-010
1.25”	801-012
1.5”	801-015
2”	PVD18016
2.50”	801-025
3”	PVD18020
4”	801-040
6”	801-060

Union

(slip x slip)

3/4”	809-7007
1”	PVD20000
1.25”	PVD20010
1.5”	PVD20012
2”	PVD20016
2.50”	809-7025
3”	PVD20024
4”	809-7040
6”	809-7060

Flange - Van Stone

1”	854-010
1.25”	854-012
1.5”	854-015
2”	854-020
3”	859P-030
4”	854P-040
6”	854P-060

PVC PIPE

PVC SDR 21

3/4”	PVC00675
1”	PVC00680
1.25”	PVC00720
1.50”	PVC00735
2”	PVC00738
2.5”	PVC00741
3”	PVC00743
4”	PVC00750

PVC Sch40 x 20’

3/4”	PVC00200
1”	PVC00210
1.25”	PVC00215
1.50”	PVC00225
2”	PVC00252
3”	PVC00330
4”	PVC00420
6”	PVC00520

PVC Sch80 X 20’ P.E.

1.50”	PVD00012
2”	PVD00016
3”	PVD00024
4”	4”X20’ Sch80 PE

PVC Sewer & Drain

4” Solid	DS92015C
4” Perf	DS92010C
6” Solid	DS92017C
4” Tri Wall Perf	DS92020
4” Tri Wall Solid	DS92025

Sewer & Drain Fittings

4” Sanitary Tee	DS94283
6” Sanitary Tee	DS94305
4” Ell 90	DS94194
4” Ell 45	DS94207
4” Ell 22.5	DS94227
4” Cross	DS94308
4” Coupling	DS94129
4” Cap	DS94345

PVC SDR35

4” x 10’ Green BE	DWV90000
4” x 13’ Green BE	DWV90002
6” x 13’ BEGSKT	DWV90006
6” x 10’ Green BE	DWV90006S
8” x 13’ BEGSKT	DWV90008
8” x 10’ Grenn BE	DWV90010

DWV Sch40 Pipe

1 .5” x10’ Sch40 PE DWV	DWV80000C
2” x 10’ Sch40 PE DWV	DWV80002C
3” x 10’ Sch40 PE DWV	DWV80004C
4” x 10’ Sch40 PE DWV	DWV80006C
4” x 10’ Sch40 BE DWV	DWV80008C
6” x 10’ Sch40 BE DWV	DWV80015C
3” x10’ Cell Core PE	DWV80005C
4” x 10’ Cell Core BE	DWV80010C

PVC Primer and Cement

PP4 Purple Primer 1/4 Pint	PVC01052
PP32 QT Purple Primer	PVC01053
PP8 Purple Primer 1/2 PT	PVC01054
Primer Purple 1 Pint	PVC01055
Primer Purple 1 Quart	PVC01060
Cement Rain & Shine 1/4 Pint	PVC00999
Cement Rain & Shine 1 Gallon	PVC01011
Cement All Weather 1 Pint	PVC01017
Cement All Weather 1 Gallon	PVC01019

DWV Fittings

Sanitary Tee

1.5”	DWV82628
2”	DWV82636
3”	DWV82646
4”	DWV82654
6”	DWV82660

Ell 90

1.5”	DWV82257
2”	DWV82259
3”	DWV82261
4”	DWV82263
6”	DWV82267

Ell 45

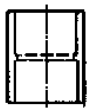
1.5”	DWV82472
2”	DWV82474
3”	DWV82476
4”	DWV82478
6”	DWV82480

Ell 22.5

1.5”	DWV82503
2”	DWV82505
3”	DWV82507
4”	DWV82509
6”	DWV82511

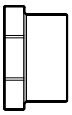
Coupling

1.5”	DWV82143
2”	DWV82145
3”	DWV82149
4”	DWV82155
6”	DWV82161



Adapter Female

2”	70320
3”	DWV82104
4”	DWV82106
6”	DWV82108



Plug

1.5”	DWV83404
2”	DWV83406
3”	DWV83408
4”	DWV83410
6”	DWV83412

Wye

4”	DWV83222

PVC Pipe Specifications

SCH-40 ASTM D-1785

Size	O.D.	Min. Wall	PSI
.5”	.840	.109	600
.75”	1.050	.113	480
1”	1.315	.133	450
1.25”	1.660	.140	370
1.5”	1.900	.145	330
2”	2.375	.154	280
2.5”	2.875	.203	300
3”	3.500	.216	260
4”	4.500	.237	220
6”	6.625	.280	180
8”	8.625	.332	160
10”	10.750	.365	140
12”	12.750	.406	130

SCH-80 ASTM D-1785

Size	O.D.	Min. Wall	PSI
.5”	.840	.147	850
.75”	1.050	.154	690
1”	1.315	.179	630
1.25”	1.660	.191	520
1.5”	1.900	.200	470
2”	2.375	.218	400
2.5”	2.875	.276	420
3”	3.500	.300	370
4”	4.500	.337	320
6”	6.625	.432	280
8”	8.625	.500	250

SDR-21 ASTM D-2241

Size	O.D.	Min. Wall	PSI
.5”	.840	.062	315
.75”	1.050	.060	200
1”	1.315	.063	200
1.25”	1.660	.079	200
1.5”	1.900	.090	200
2”	2.375	.113	200
2.5”	2.875	.137	200
3”	3.500	.167	200
4”	4.500	.214	200
6”	6.625	.316	200
8”	8.625	.410	200

PVC-DS ASTM D-2729

Size	O.D.	Min. Wall
3”	3.250	.070
4”	4.215	.075
6”	6.275	.100

SDR-35 ASTM D-3034

Size	O.D.	Min. Wall
4”	4.215	.120
6”	6.275	.180
8”	8.400	.240
10”	10.500	.300
12”	12.500	.360
15”	15.300	.437

Flow in GPM for Various Size Orifices

Orifice Size	2’ Head	3’ Head	4’ Head	5’ Head	6’ Head	7’ Head	8’ Head
1/8”	0.273	.335	0.386	0.432	0.473	0.511	0.547
5/32”	0.427	0.523	0.604	0.675	0.740	0.799	0.854
3/16”	0.615	0.753	0.870	0.973	1.066	1.151	1.231
7/32”	0.837	1.026	1.184	1.324	1.451	1.567	1.675
1/4”	1.094	1.340	1.548	1.730	1.895	2.047	2.188

K-Rain Hydrotek Distributing Valve
Pressure Indexing Zone Valve

4000 Series

Pressure Loss - 4 Outlet Valve

Flow (GPM)	10	20	30	40
PSI Loss	2.0	3.0	4.5	6.4

(Bare Valve Values)

•Pressure Loss - 6 Outlet Valve

Flow (GPM)	10	20	30
PSI Loss	2.0	4.5	7.5

•Pressure Rating: 25-75 PSI
•4 Outlet Models have interchangeable Cams for 2-4 Zone Operation. 4402-4404
•6 Outlet Models have interchangeable Cams for 2-6 Zone Operation. 4602-4606

6000 Series

Pressure Loss - 4 Outlet Valve

Flow (GPM)	20	40	60	80	100
PSI Loss	2.5	3.5	5.0	7.5	10.0

(Bare Valve Values)

Pressure Loss - 6 Outlet Valve

Flow (GPM)	20	40	60	80	100
PSI Loss	3.0	4.0	6.0	9.0	11.0

•Pressure Rating: 25-75 PSI
•4 Outlet Models have interchangeable Cams for 2-4 Zone Operation. 6402-6404
•6 Outlet Models have interchangeable Cams for 5-6 Zone Operation. 6605-6606

4000

The 4000 RCW Indexing Valve

•ABS Polymer Construction-High strength, non corrosive body for long product life.
•Operates at low 10 GPM at Pressures of 25-75 PSI-Reliably automates multiple zoned residential and small commercial wastewater systems.

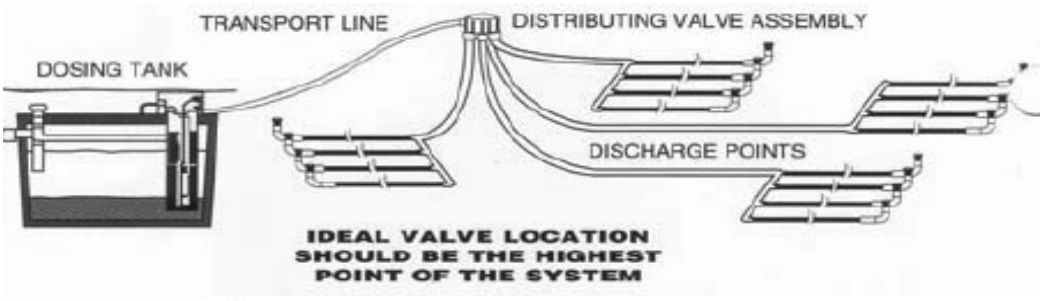
The 6000 RCW Indexing Valve

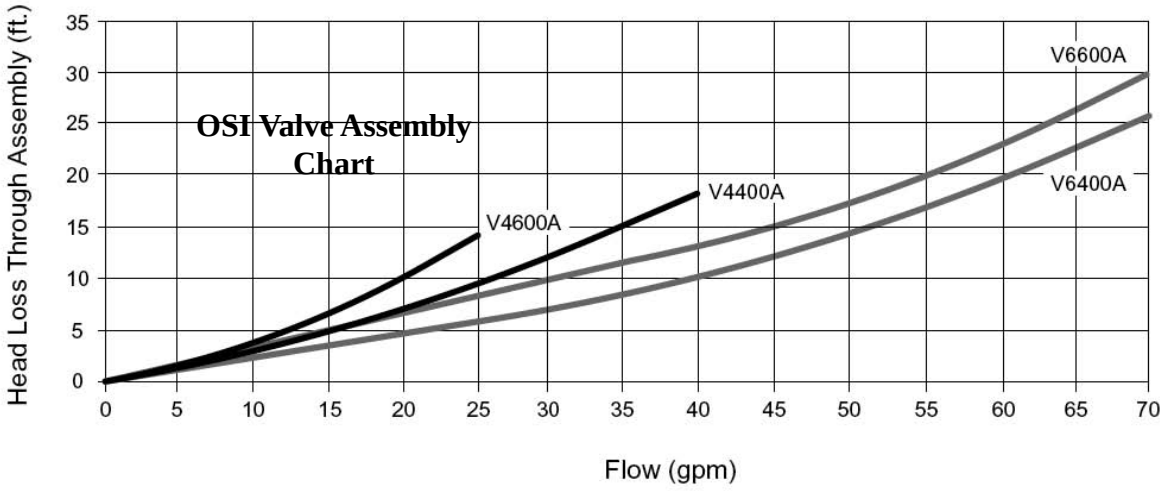
•Metal Die Cast Body-Durable, long lasting, and capable of high pressure applications.
•Operates at 15 GPM at Pressures of 25-150 PSI-Ideal for onsite pump-fed wastewater and effluent water applications.
•Built-in Atmospheric Vacuum Breaker-Releases any vacuum created between the pump and the valve on shut down.

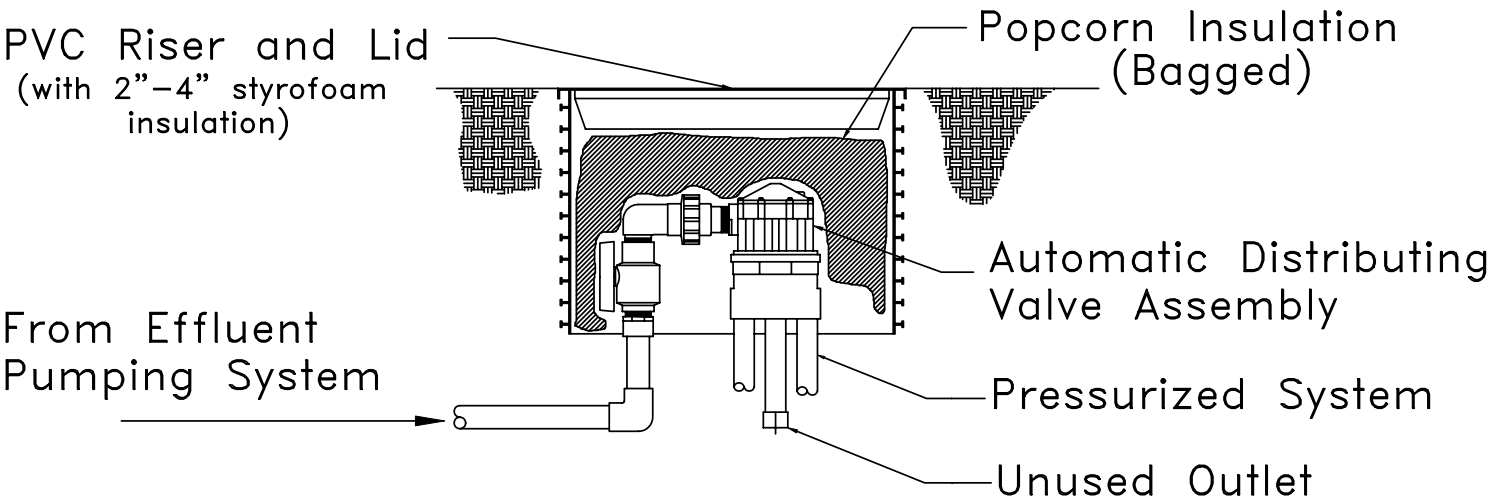
6000

Model	Inlet Size (in)	Outlet Size (in)	Flow Range (gpm)
V4000	1.25	1.25	10-40
V6000	1.5	1.5	15-60

INSTALLATION DIAGRAM







1–Application

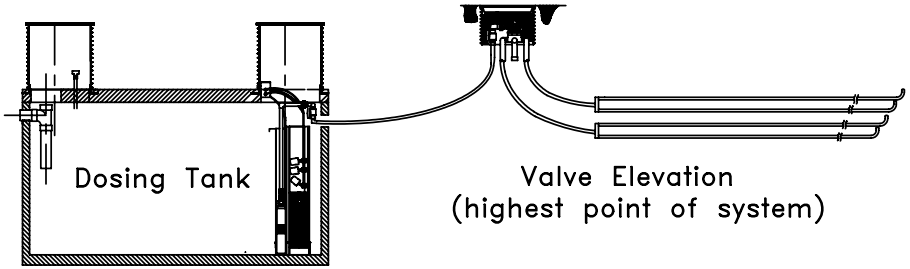
The Hydrotek 4000 and 6000 series valves are conducive to your effluent application. The construction materials used in the valves are compatible for use in effluent. Particles that can cause the valve to not seal and operate properly, are alleviated with use of your screened pump vault and 4" turbine submersible effluent pumps. The screen effectively stops particles greater than 1/8" in diameter from being passed into the pump and along to the valve; the use of the 4" turbine submersible effluent pump ensures that there will be adequate pressure available at the valve to index.

2–Installation Location

The valve location in a waste water system is very important to the long term reliable operation of the valve. The most common problem is the valve is installed in a low position relative to the drain fields and the valve will never drain and cycle. Remember that after the water source is cut off, the valve must drain to allow the stem and disk to spring up and cycle.

3–System Startup

The transport line should always be flushed with clean water before installing the valve. With the pump running, alternately close and open the ball valve on the distributing valve assembly to check proper rotation of the valve.

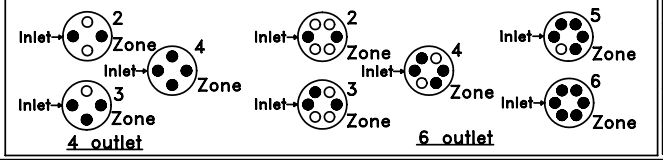


Distribution Valve

Description	Elevation
Riser Lid	
Valve Top	
Tank Outlet	
Valve Main	
Outlet Main	
Manifold	

Active Zone Diagram– Top View

Black dot indicates active outlets for cam being used



Feet of Head per GPM Flow

Model	Inlet Size FPT	Outlet Size SOC	20 GPM	30 GPM	40 GPM	50 GPM
V4400A	1.25"	1.25"	7.0 ft.	12.0 ft.	18.0 ft.	N/A
V4600A	1.25"	1.25"	9.5 ft.	N/A	N/A	N/A
V6400A	1.50"	1.50"	4.0 ft.	7.0 ft.	11.0 ft.	14.5 ft.
V6600A	1.50"	1.50"	7.0 ft.	9.5 ft.	13.0 ft.	18.0 ft.

DRAWN jdu | SCALE | DATE 12/20/04 | APPROVED

7125 East Pickard Road
P. O. Box 309
Mt. Pleasant, MI 48804-0309
ph-989-773-9938
fax-989-772-3415

MILAN Engineered Systems

NO	REVISON	DATE	BY
1.	12/04		jdu
2.			
3.			
4.			
5.			

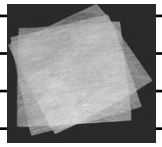
SHEET 1 OF 1

DRAWING NO. HDV

Drainfield Supplies

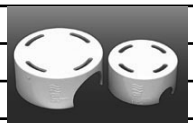
Filter Fabric

Filter Fab. 3' x 300' Lt. Wt. (900 sq ft.)	SEW21752
Filter Fab. 3' x 1500' Lt. Wt. (4500 sq ft.)	SEW21754
Filter Fab. 6' x 300' Lt. Wt. (1800 sq ft.)	SEW21756
Filter Fab. 6' x 1500' Lt. Wt. (9000 sq ft.)	SEW21758
Note: Filter Fabric available in wider widths	



Orifice Sheilds

OS075 CW 3/4" Orifice Shield	SEW22190
OS100CW 1" Orifice Shield	SEW22200
OS125CW 1.25" Orifice Shield	SEW22210
OS150CW 1.5" Orifice Shield	SEW22220
OSI200CW 2" Orifice Shield	SEW22230



Carbon Filters

CF3 Carbon Filter 3" PVC	SEW22137
CFR3 Carbon Refill	SEW22138
CF4 Carbon Filter 4" PVC	SEW22139
CFR4 Carbon Refill	SEW22140

Long Sweep Ells

Ell Long Sweep 3/4" SCH 40 Bell End PVC	SEW22506
Ell Long Sweep 1" SCH 40 Bell End PVC	SEW22508
Ell Long Sweep 1 1/4" SCH 40 Bell End PVC	SEW22510
Ell Long Sweep 1 1/2" SCH 40 Bell End PVC	SEW22512
Ell Long Sweep 2" SCH 40 Bell End PVC	SEW22514

Polylok Drop Boxes

3017 12 D-Box 12" Polylok	SEW15900
3017 R Riser 12" Polylok	SEW15950
Rain Grate Lid	SEW15960

Distribution Boxes

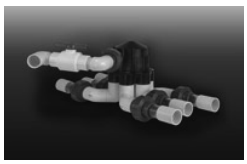
7HD2 7 Hole Distribution Box	SEW16094
9HD2 9 Hole Distribution Box	SEW16095
Tru-Flow Distribution Box	SEW16150

Valve Boxes

7" Valve Box W/Cover	SEW16200
10" Valve Box W/Cover	SEW16210
12" x 17" Valve Box W/Cover	SEW16220

OSI Distribution Valves

V6403A Dist. Valve Assy.	SEW22070
V6404A Dist. Valve Assy.	SEW22080
V6605A Dist. Valve Assy.	SEW22090
V6606A Dist. Valve Assy.	SEW22100



K-Rain Hydrotek Valves

4400-RCW 1.25" 10-40gpm	SEW12030
6400-RCW 1.5" 15-75gpm	SEW12055
6600-RCW 1.5" 15-75gpm	SEW12060

Cam needed for zone indexing

Specialty Valves

4" Bull Run Valve	SEW13065
Divert (Paddle) Valve	SEW13070

Pipe Connectors (Fernco)

4" Jim Cap (Rubber Cap w/ Clamp)	C01940
5" Jim Cap (Rubber Cap w/ Clamp)	C01950
6" Jim Cap (Rubber Cap w/ Clamp)	C01960
1-1/2" Fernco Coupling	F50004
2" Fernco Coupling	F50006
3" Fernco Coupling	F50008
4" Fernco Coupling	F50010
5" Fernco Coupling	F50012
6" Fernco Coupling	F50014
8" Fernco Coupling	F50031
2 x 1-1/2" Coupling	F50018
3 x 2" Coupling	F50019
4 x 2" Coupling	F50022
4 x 3" Coupling	F50024
6 x 4" Coupling	F50028
4" CI-Pvc x Clay	F50047
6" Clay x 4" CI-Plastic	F50050
6" Clay x 6" CI-Plastic	F50052

Septic Tank Draw Down / Gallons per Inch

(Inside Dimensions)

Tank Width	Tank Length												
	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
5	12.46	14.02	15.58	17.13	18.69	20.25	21.81	23.37	24.92	26.48	28.04	29.60	31.15
5.25	13.08	14.72	16.36	18.99	19.63	21.26	22.90	24.53	26.17	27.81	29.44	31.08	32.71
5.5	13.71	15.42	17.13	18.85	20.56	22.28	23.99	25.70	27.42	29.13	30.84	32.56	34.27
5.75	14.33	16.12	18.91	19.71	21.50	23.29	25.08	26.87	28.66	30.45	32.24	34.04	35.83
6	14.95	16.82	18.69	20.56	22.43	24.30	26.17	28.04	29.91	31.78	33.65	35.52	37.39
6.25	15.58	17.52	19.47	21.42	23.37	25.31	27.26	29.21	31.15	33.10	35.05	37.00	38.94
6.5	16.20	18.23	20.25	22.28	24.30	26.33	28.35	30.38	32.40	34.43	36.45	38.48	40.50
6.75	16.82	18.93	21.03	23.13	25.23	27.34	29.44	31.54	33.65	35.75	37.85	39.96	42.06
7	17.45	19.63	21.81	23.99	26.17	28.35	30.53	32.71	34.89	37.07	39.25	41.44	43.62
7.25	18.07	20.33	22.59	24.85	27.10	29.36	31.62	33.88	36.14	38.40	40.66	42.91	45.17
7.5	18.69	21.03	23.37	25.70	28.04	30.38	32.71	35.05	37.39	39.72	42.05	44.39	46.73
7.75	19.32	21.73	24.14	26.56	28.97	31.39	33.80	36.22	38.63	41.05	43.46	45.87	48.29
8	19.94	22.43	24.92	27.42	29.91	32.40	34.89	37.39	39.88	42.37	44.86	47.35	49.85

High Volume Formula: Length (Ft.) x Width (Ft.) x Depth (1 Ft.) x 7.5 (Gals/Cu Ft) / 12" = Gallons Per Inch

Single Phase Motor Maximum Cable Length

(Motor to Service Entrance)

Motor Rating		Copper Wire Size (1)								
Volts	HP	14	12	10	8	6	4	2	0	00
115	1/3	130	210	340	540	840	1300	1960	2810	3540
	1/2	100	160	250	390	620	960	1460	2160	2630
230	1/3	550	880	1390	2190	3400	5250	7960	11770	
	1/2	400	650	1020	1610	2510	3880	5880	8720	
	3/4	300	480	760	1200	1870	2890	4370	6470	7870
	1	250	400	630	990	1540	2380	3610	5360	6520
	1.5	190	310	480	770	1200	1870	2850	4280	5240
	2	150	250	390	620	970	1530	2360	3620	4480
	3	120	190	300	470	750	1190	1850	2890	3610
	5	0	110	180	280	450	710	1110	1740	2170

Pump Selection (Pressurized System)

Input Parameters	
Orifice Size (inches)	
Residual Head at Last Orifice (feet)	
Orifice spaceing (feet)	
Number of Laterals per Cell	
Lateral Length (feet)	
Lateral Line Size (inches)	
Lateral Pipe Class/Schedule	
Distributing Valve Model	
Manifold Line Size (inches)	
Manifold Pipe Class/Schedule	
Lift to Manifold (feet)	
Transport Length (feet)	
Transport Line Size (inches)	
Transport Pipe Class/Schedule	
Discharge Assembly Size (inches)	
Flow Meter (inches)	
"Add-on" Friction Losses (feet)	

◄ Pumped Distribution System

▼ Pump and Dump

Pump Selection (Non-Pressurized System)

Input Parameters	
Design Flow Rate (gpm)	
Distributing Valve Model (Effluent only)	
Lift to Manifold / Tank (feet)	
Transport Length (feet)	
Transport Line Size (inches)	
Transport Pipe Class/Schedule	
Discharge Assembly Size (inches)	
Flow Meter - if applicable (inches)	
"Add-on" Friction Losses (feet)	

Effluent: Tank to Dispersal Field
Sewage: House to Tank / City Service

Recommended Basin Diameters

GPM	18”	24”	30”	36”	48”
20	x	x	x	x	x
25	x	x	x	x	x
30	x	x	x	x	x
35	x	x	x	x	x
40		x	x	x	x
45		x	x	x	x
50		x	x	x	x
60		x	x	x	x
70			x	x	x
80			x	x	x
90			x	x	x
100			x	x	x
125				x	x
150				x	x
175					x
200					x
225					x
Gallons/Foot of Basin Depth	13.25	23.5	36.8	53	94.2
Gallons In 2.5’ of Basin Depth	33.1	58.8	92	132.5	235.5

Grommet Specs

Grommet dia.	Pipe OD	Splice box	Hole saw size
1/2”	0.84”	--	1”
3/4”	1.05”	--	1-1/4”
1”	1.315”	SB1 to SB4	1-9/16”
1-1/4”	1.660”	SB5 to SB6	1-3/4”
1-1/2”	1.9”	--	2-1/8”
2”	2.375”	--	2-3/4”
3”	3.5”	--	3-7/8”
4”	4.5”	SBEX	5”
6”	6.625”	--	7”

Fractional Conversion Chart

Fraction	Decimal	Fraction	Decimal
1/64	.015625	33/64	.515625
1/32	.03125	17/32	.53125
3/64	.046875	35/64	.546875
1/16	.0625	9/16	.5625
5/64	.078125	37/64	.578125
3/32	.09375	19/32	.59375
7/64	.109375	39/64	.609375
1/8	.125	5/8	.625
9/64	.140625	41/64	.640625
5/32	.15625	21/32	.65625
11/64	.171875	43/64	.67185
3/16	.1875	11/16	.6875
13/64	.203125	45/64	.703125
7/32	.21875	23/32	.71875
15/64	.234375	47/64	.734375
1/4	.25	3/4	.75
17/64	.265625	49/64	.765625
9/32	.28125	25/32	.78125
19/64	.296875	51/64	.796875
5/16	.3125	13/16	.8125
21/64	.328125	53/64	.828125
11/32	.34375	27/32	.84375
23/64	.359375	55/64	.859375
3/8	.375	7/8	.875
25/64	.390625	57/64	.890625
13/32	.40625	29/32	.90625
27/64	.421875	59/64	.921875
7/16	.4375	15/16	.9375
29/64	.453125	61/64	.953125
15/32	.46875	31/32	.96875
31/64	.484375	63/64	.984375
1/2	.50	1	1.00

Fluid Volume in Pipe

Pipe Size	Volume
1 1/4”	.06
1 1/2”	.09
2”	.16
3”	.36
4”	.625
6”	1.4
8”	2.6
10”	4.07

Minimum Solids Flow (2’/sec.)

Pipe Size	Minimum GPM
1 1/4”	9
1 1/2”	13
2”	21
3”	46
4”	80
6”	180
8”	325
10”	500

FRICTION LOSS CHART

FRICTION LOSS PER 100 FEET OF PIPE OF PLASTIC PIPE

	PIPE DIAMETER																			
	1/2 in.		3/4 in.		1 in.		1 1/4 in.		1 1/2 in.		2 in.		2 1/2 in.		3 in.		4 in.		5 in.	
GPM	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80	SCH 40	SCH 80
1	2.08	4.02	0.51	0.86																
2	4.16	8.03	1.02	1.72	0.55	0.88	0.14	0.21	0.07	0.10										
5	23.44	45.23	5.73	9.67	1.72	2.75	0.44	0.66	0.22	0.30	0.066	0.10	0.038	0.05	0.015	0.02				
7	43.06	83.07	10.52	17.76	3.17	5.04	0.81	1.21	0.38	0.55	0.11	0.15	0.051	0.07	0.021	0.028				
10	82.02	-	20.04	33.84	6.02	9.61	1.55	2.30	0.72	1.04	0.21	0.29	0.09	0.12	0.03	0.04				
15	-	-	42.46	71.70	12.77	20.36	3.28	4.87	1.53	2.20	0.45	0.62	0.19	0.26	0.07	0.09				
20	-	-	72.34	-	21.75	34.68	5.59	8.30	2.61	3.75	0.76	1.06	0.32	0.44	0.11	0.15	0.03	0.04		
25	-	-	-	-	32.88	52.43	8.45	12.55	3.95	5.67	1.15	1.60	0.49	0.67	0.17	0.22	0.04	0.06		
30	-	-	-	-	46.08	73.48	11.85	17.59	5.53	7.95	1.62	2.25	0.68	0.94	0.23	0.31	0.06	0.08	0.02	0.03
35	-	-	-	-	-	-	15.76	23.40	7.36	10.58	2.15	2.99	0.91	1.25	0.31	0.42	0.08	0.11	0.03	0.04
40	-	-	-	-	-	-	20.18	29.97	9.43	13.55	2.75	3.83	1.16	1.60	0.40	0.54	0.11	0.14	0.03	0.04
45	-	-	-	-	-	-	25.10	37.27	11.73	16.85	3.43	4.76	1.44	1.99	0.50	0.67	0.13	0.17	0.04	0.06
50	-	-	-	-	-	-	30.51	45.30	14.25	20.48	4.16	5.79	1.75	2.42	0.60	0.81	0.16	0.21	0.05	0.07
60	-	-	-	-	-	-	-	-	19.98	28.70	5.84	8.12	2.46	3.39	0.85	1.14	0.22	0.30	0.07	0.10
70	-	-	-	-	-	-	-	-	-	-	7.76	10.80	3.27	4.51	1.13	1.51	0.30	0.39	0.10	0.13
75	-	-	-	-	-	-	-	-	-	-	8.82	12.27	3.71	5.12	1.28	1.72	0.34	0.45	0.11	0.14
80	-	-	-	-	-	-	-	-	-	-	9.94	13.83	4.19	5.77	1.44	1.94	0.38	0.50	0.13	0.16
90	-	-	-	-	-	-	-	-	-	-	12.37	17.20	5.21	7.18	1.80	2.41	0.47	0.63	0.16	0.20
100	-	-	-	-	-	-	-	-	-	-	15.03	20.90	6.33	8.72	2.18	2.93	0.58	0.76	0.19	0.24
125	-	-	-	-	-	-	-	-	-	-	-	-	9.58	13.21	3.31	4.43	0.88	1.16	0.29	0.37
150	-	-	-	-	-	-	-	-	-	-	-	-	13.41	18.48	4.63	6.20	1.22	1.61	0.40	0.52
175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.16	8.26	1.63	2.15	0.54	0.69
200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.88	10.57	2.08	2.75	0.69	0.88
250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.93	16.00	3.15	4.16	1.05	1.34
300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.41	5.83	1.46	1.87
350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.87	7.76	1.95	2.49
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.52	9.93	2.49	3.19
450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.09	3.97
500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.76	4.82

MILAN Supply Company

THIS CHART GIVES FRICTION LOSSES FOR YOUR GIVEN FLOW RATE PER 100 FEET OF PIPE. EXAMPLE: IF YOU HAVE 60 GALLONS PER MINUTE AND YOU'RE USING 2 INCH SCHEDULE 80 PIPE AND YOU HAVE A 160 FEET OF PIPE, YOUR FRICTION LOSS IS 8.12 x 1.6 = 12.99 FEET.

NOTE: IT IS BEST TO KEEP YOUR FRICTION LOSS (PER 100 FEET OF PIPE) TO LESS THAN 5 FEET.

FRICTION LOSS IN PVC FITTINGS IN EQUIVALENT FEET OF STRAIGHT PIPE

NORMAL PIPE SIZE (IN)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
90° ELBOW, STANDARD	1.5	2.0	2.25	4.0	4.0	6.0	8.0	8.0	12.0
45° ELBOW, STANDARD	0.75	1.0	1.4	1.75	2.0	2.5	3.0	4.0	5.0
INSERT COUPLING	0.5	0.75	1.0	1.25	1.5	2.0	3.0	3.0	4.0
GATE VALUE	.3	.4	.6	.8	1.0	1.5	1.6	2.0	3.0
MALE-FEMALE ADAPTERS	1.0	1.5	2.0	2.75	3.5	4.5	-	6.5	9.0
TEE - FLOW through RUN	1.0	1.4	1.7	2.3	2.7	4.3	5.1	6.3	8.3
TEE - FLOW THROUGH BRANCH	4.0	5.0	6.0	7.0	8.0	12.0	15.0	16.0	22.0

AK Septic Tanks

AK Septic Tanks provide installers with another major component of an on-site septic system. The roto-molded, single-piece tanks are manufactured from HDPE (high-density polyethylene) for strength, durability, and ease of installation. All tanks are subject to stringent quality control checks and are tested for water tightness before shipment. The arch-shaped corrugated tank profile maximizes soil loading potential to resist floatation in wet or less cohesive soils. Expect trouble free service from any AK septic tank, if a properly sized, installed, and maintained system is used.

- ☑ ***Made from HDPE***
- ☑ ***Won't rust, rot, or corrode***
- ☑ ***Watertight***
- ☑ ***Lightweight***
- ☑ ***Anti-Flotation Design***
- ☑ ***Strong Corrugated Profile***
- ☑ ***Risors & Accessories Available***

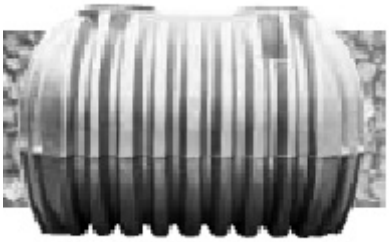
- ***300 Gallon***
- ***500 Gallon***
- ***750 Gallon***
- ***1000 Gallon (Single or Dual Compartment)***
- ***1300 Gallon (Single or Dual Compartment)***
- ***1500 Gallon (Single or Dual Compartment)***
- ***Pump Tanks also available***

AK Poly Septic Tanks

300 Gal Septic Tank	SEP96000
500 Gal Poly Tank	SEP96020
750 Gal Septic Tank	SEP96030
1000 Gal Tank	SEP96040
1000 Gal 2 Comp.	SEP96050
1500 Gal 1 Comp. Tank	SEP96060
1500 Gal 2 Comp. Tank	SEP96070
21" Septic Tank Lid	SEP96099
10" ID x 30" High Riser	SEP97000
20" x 6" Twist On Riser	SEP97100
20" x 12" Twist On Riser	SEP97105

Model	Height	Width	Length	Weight
500 GAL.	43"	62"	90"	200#
750 GAL.	53.25"	66"	92"	245#
1000 GAL.	63"	67"	102"	370#
1300 GAL.	69"	69"	113"	575#
1500 GAL.	70"	69"	113"	575#

DekoRRa Products
#111 Septic Riser Rock 32"x30"x16"



Proven Solutions for the Stormwater Industry

4" 100mm to 48" 1200mm

CORRUGATED HDPE SMOOTH-FLOW PIPE

✓ CMP/RCP Replacements ✓ Retention/Detention Systems ✓ Culverts ✓ Storm Sewers

ALSO AVAILABLE
ON-SITE SEPTIC COMPONENTS
INCLUDING 3-WALL PIPE & FITTINGS

AASHTO M294; AASHTO M252; ASTM F405; ASTM F667; ASTM F810; ASTM D3212

Baughman Tile Co.
BTC Pioneers in the Drainage Industry

XERXES® CORPORATION

Underground Fiberglass Septic Tanks

As a leading manufacturer of underground storage tanks, Xerxes Corporation offers a wide range of fiberglass underground tanks specifically designed for wastewater/septic applications. Xerxes is a major supplier to many of the world's largest oil companies, with more than 100,000 tanks in service for petroleum product storage. With a long history of innovation and excellence in design and manufacturing, Xerxes tanks are an increasingly popular choice for a variety of water and wastewater applications as well. From residential homes to commercial and industrial facilities, Xerxes provides a full line of structurally sound, watertight tanks.

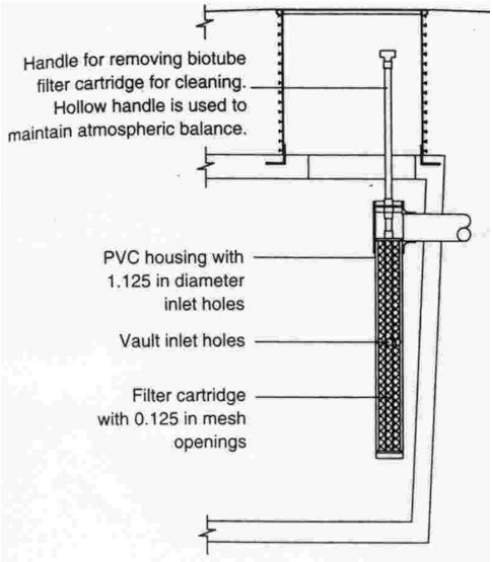
Features:

- 600- to 62,000-gallon sizes
- Rustproof, long-lasting fiberglass
- Watertight
- Testable for watertightness
- Structurally strong
- Lightweight, easy to install
- H-20 Load Rated
- Competitively priced

Four manufacturing facilities nationwide!

For more information, visit www.xerxescorp.com

XERXES® CORPORATION


Handle for removing biotube filter cartridge for cleaning. Hollow handle is used to maintain atmospheric balance.
PVC housing with 1.125 in diameter inlet holes
Vault inlet holes
Filter cartridge with 0.125 in mesh openings

COMMON EFFLUENT FILTER QUESTIONS

What is a septic tank?
The septic tank is the first component in a private wastewater system. It is a large, underground, watertight container that typically ranges in size from 1000 to 1500 gallon capacity. In addition to the overall physical size, tanks also vary according to the internal configuration based upon whether the tank is a single or double compartment container. The number of bedrooms in the house usually determines the actual size.

How does it work?
Raw water flows from the kitchen, bathrooms, and laundry room into the tank, where the solids are separated from the liquid. The heavier solids settle to the bottom of the tank, where bacteria gradually decompose them. However, some of the solids will remain, forming a sludge layer that will eventually have to be pumped out.

The lighter solids; such as fats, oils, and greases, will float to the top and gradually thicken. This scum layer will also eventually have to be pumped out. The liquid waste, which is in between the scum layer and the sludge layer, goes to the drainfield.

Why do I need an effluent filter?
The last component in the system is the drainfield. The soil below the drainfield is the final disposal area for the liquid waste, commonly referred to as effluent. The drainfield will last indefinitely unless it is forced to handle large particles, which will cause it to clog. Once the system becomes clogged, effluent will either rise to the surface above the drainfield, or back-up into the home.

An effluent filter protects your drainfield by keeping large particles in the tank, while allowing the effluent to go to the drainfield. The drainfield is the most expensive part of your septic system, costing thousands of dollars to repair or replace.

How often does the filter need to be cleaned?
Several different factors will determine how often your filter will require maintenance. Two primary factors are the number of people living in the house and the amount of water used. In addition, personal needs and individual habits can inhibit the normal function of your septic tank. Garbage disposals, anti-bacterial soaps and detergents, pharmaceutical medicines, and disposing unwanted material into the tank, can all place additional stress on the filter.

How do I know what filter to buy?
The single most important factor is to make sure you select a filter that will require minimum maintenance. While there is no shortage of cheap filters to choose from, many homeowners end up throwing cheap filters away because they quickly become plugged and require constant cleaning and maintenance.

The excitement of saving a few dollars on the initial cost of an effluent filter will quickly be forgotten when the filter becomes clogged and you're left with the choice between cleaning it, or paying someone else to clean it.

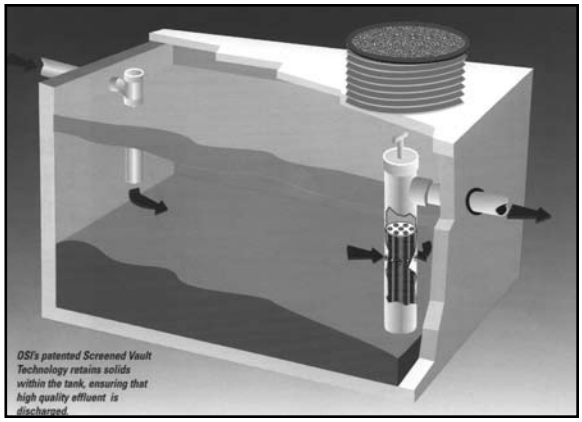
Tell your installer that you want a filter that will protect your drainfield, is designed to require minimum maintenance, and is strong enough to last for the life of your septic system.

BOTTOM LINE: PICK A FILTER YOU CAN LIVE WITH

Effluent Filters

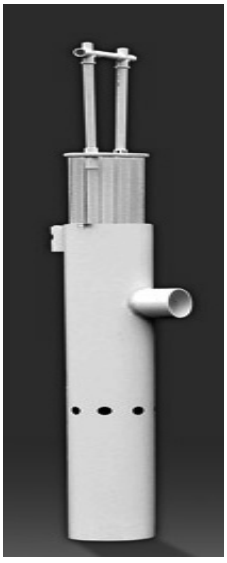
Orenco Biotube Effluent Filters

Model	Prod #
4” Biotube Jr. Insert Filters	SEW22156
FTS0436-28M 4” Biotube 36”L	SEW22158
FTS0444-36M Biotube 44”L	SEW22160
FT0822-14B 8” Biotube 22”L	SEW22175
FT0848-36 8” Biotube 48”L	SEW22180
FT1254-36 12” Biotube 54”L	SEW22185
FT1554-36 15” Biotube 54”L	SEW22187
FT1554-36R 15” Biotube G/Rail	SEW22188



Source	Recommended Filters
2 or 3 bdrm single family homes	FT0444-36
4 bdrm or larger homes	FT0444-36, FT0854-36
1000 gallons per day	FT0854-36, FT1254-36
2000 gallons per day	FT1254-36, FT1554-36
3000 gallons per day	FT1254-36, FT1554-36
5000 gallons per day	FT1554-36
10,000 gallons perday or more	Multiple filters

Use multiple filters or deeper versions of standard filters to achieve desired screen area as an option at any flow. Many situations require special designs; modifications of standard filter dimensions are accommodated easily.



Zoeller Effluent Filters

Model	Prod #	GPD
Zoeller Residential Filter #170-0078	SEW15003	500

Polylok/Zabel Effluent Filters

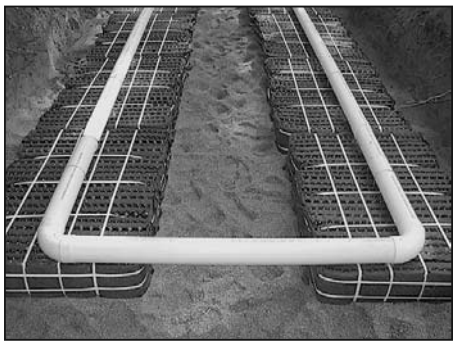
Model	Inv. #	GPD
A1801 4 x 22 Effluent Filter Cartridge	SEW15005	500
A1800C 4 X 22 VT-B35 Filter W/Case	SEW15006	500
A100 12 x 20 Zabel Filter	SEW15010	2500
A300 12 x 20 Zabel Filer	SEW15015	2500

Only the Eljen GSF Pretreats Effluent with a Patented Two-Stage Bio-Matt™

THE SMALL NON-AGGREGATE LEACHFIELD SYSTEM... WITH BIG PERFORMANCE!

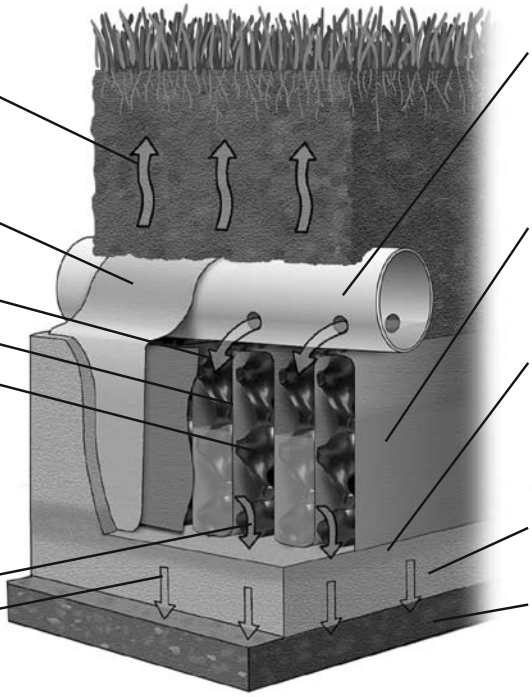
- **Greater Long Term Leaching Capacity**
- **Lower Site Impact**
- **No Stone Required...Less Offsite Fill**
- **Lightweight Recycled Materials**
- **Requires a Much Smaller Installation Area**

GSF®



ELJEN'S EXCLUSIVE FOLDED DESIGN PROVIDES THE MAXIMUM TREATMENT SURFACE AREA IN A MINIMUM OF SPACE

- **Porous Top of the Eljen GSF** allows evapotranspiration and oxygen exchange for better effluent treatment.
- **Anti-Siltation Fabric** keeps fines out of the Eljen GSF
- **Untreated Effluent**
- **Bio-Matt™ Fabric**
- **Cuspated Plastic Core** provides separation between layers of Bio-Matt™ fabric. Maintains structural integrity of modules & aids oxygen transfer. Increases treatment surface area & effluent storage capacity.
- **Partially Treated Effluent**
- **Treated Effluent**



Perforated Pipe distributes effluent to the Eljen GSF. Pipe is secured to the GSF Modules with preformed metal clamps.

Primary Treatment Zone forms on Bio-Matt™ fabric. Up to 10 ft² of fabric provided for every ft² of soil interface.

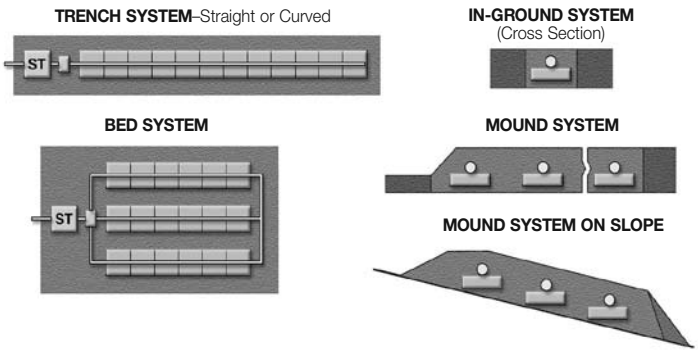
Secondary Treatment Zone forms at sand layer. Long term acceptance rate of this biomat layer is significantly increased as compared to conventional systems.

6˝ Specified Sand Layer provides additional filtration

Native Soil or Fill provides final filtration (where other systems begin!)

FLEXIBLE SITE INSTALLATION

- Mound or in-ground installations
- Level or sloped sites
- Trench or bed layouts
- Gravity or pressure systems
- D-Box or serial distribution



eljen CORPORATION

Environmental Products Since 1970

Visit: Eljen.com

Infiltrator Chamber Systems

Infiltrator® Systems, Inc.
Infiltrator is the original and number-one septic manufactured drainfield system in the onsite industry. The plastic chambers are a direct replacement for stone and pipe leachfields and provide cost-effective, efficient methods for handling residential and commercial wastewater.

Equalizer® 36 Chamber
with PosiLock End Plate
Size (W x L x H) = 22" x 100" x 13.5"

Standard Chamber
with PosiLock End Plate
Size (W x L x H) = 34" x 75" x 12"

Quick4® Equalizer 36 Chamber
with MultiPort End Cap
Size (W x L x H) = 22" x 53" x 12"

Quick4® Standard Chamber
with MultiPort End Cap
Size (W x L x H) = 34" x 53" x 12"

INFILTRATOR® SYSTEMS INC
Environmental Onsite Wastewater Solutions®

EQ-36 22” Width 8.5’ Length	**CHA17000**
EQ-36 End-Plate 6” Invert	**CHA17007**
EQ-36 Quick 4	**CHA17002**
EQ-36 Quick 4 End Plate	**CHA17020**
Standard Quick 4	**CHA17025**
Standard Quick 4 End Plate	**CHA17030**

The Infiltrator Chamber System
Inspection port cutout
No stone or geotextile required
Large storage volume accommodates peak flows of effluent
Entire bottom of trenches open for unobstructed infiltration into soil

RESIDENTIAL ONSITE WASTEWATER SYSTEM REVIEW

EVALUATION CHECKLIST
USE PRIOR TO REPAIRING ONSITE SYSTEM

NAME _____ PHONE _____

SITE ADDRESS _____ PHONE _____

_____ PHONE _____

MAILING ADDRESS (If Different)_____

DATE _____ Sun Mon Tue Wed Thur Fri Sat TIME OF DAY_____

1. # OF PEOPLE LIVING IN HOME:_ADULTS: _____M _____F _____CHILDREN (Total inc. Teenagers)
TEENAGERS:____M_____F

2. LAUNDRY HABITS: MAX. _____LOADS / DAY CONSECUTIVE LOADS: YES / NO
TOTAL_____LOADS/WEEK

3. BRAND OF LAUNDRY DETERGENTS USED:_____WITH / WITHOUT BLEACH POWDER / LIQUID

4. BLEACH USED: YES / N0 POWDER / LIQUID USE: _____CUPS/LOAD _____LOADS/WEEK

5. HOT OR COLD WATER USED:_____

6. LIQUID FABRIC SOFTNER USED:_____

7. NUMBER OF ROLLS OF TOILET PAPER USED PER WEEK:_____

8. GARBAGE DISPOSAL: YES / NO USE: _____TIMES/DAY _____TIMES/WEEK

9. DISHWASHER: YES / NO USE: _____TIMES/DAY _____TIMES/WEEK

10. IS A WATER SOFTENER USED: YES / NO SALINE CHLORINATION: YES / NO

11. IS A DRAIN CLEANER USED: YES / NO BRAND_____ FREQUENCY:_____

12. LIST ANY ANTIBACTERIAL PRODUCTS USED (ie: hand cleaner, soaps, cleaning products):_____
_____
_____

13. IS ANY RESIDENT USING A (LONG TERM) PRESCRIPTION DRUG OR ANTIBIOTICS: YES / NO

14. IS THIS THE FIRST HOME YOU HAVE LIVED IN THAT HAS A SEPTIC SYSTEM: YES / NO

15. HOW OLD IS THE SYSTEM: _____YEARS

16. HAS THE SYSTEM EVER BACKED UP: YES / NO DAY OF WEEK: Sun Mon Tue Wed Thurs Fri Sat

17. HAS EFFLUENT EVER SURFACED: YES / NO
IF YES: WINTER: YES / NO SUMMER: YES / NO DAY OF WEEK: Sun Mon Tue Wed Thurs Fri Sat

18. HAS PLUMBING EVER BACKED UP INTO HOME: YES / NO
IF YES: WINTER: YES / NO SUMMER: YES / NO DAY OF WEEK: Sun Mon Tue Wed Thurs Fri Sat

19. WATER SOURCE: (circle) PUBLIC PRIVATE WELL COMMUNITY WELL OTHER _____

EVALUATION CHECKLIST
USE PRIOR TO REPAIRING ONSITE SYSTEM
CONTINUED - PAGE 2

20. TYPE OF SYSTEM: GRAVITY / GRAVITY WITH PUMP / PD / MOUND / SAND FILTER / ATU OTHER _____
_____

21. CONTROL SYSTEM: DEMAND / TIMED

22. SCREENED OUTLET BAFFLE: YES / NO HAS SCREEN EVER PLUGGED: YES / NO

23. DATE OF LAST PUMPOUT:_____

24. SLUDGE LEVELS IN SEPTIC TANK: 1ST COMPARTMENT ACCUM._____" FLOATING MAT_____"
2ND COMPARTMENT ACCUM._____" FLOATING MAT_____"

25. SLUDGE LEVEL IN PUMP TANK: ACCUM._____"

26. FLOWS: _____GPD (Design) _____GPD (Average) _____GPD (Peak)

27. SOIL TYPE WITHIN BOTH 12" HORTIZONALLY AND 12" BELOW THE BOTTOM OF THE DISPOSAL FIELD:
_____1 2 3 4 5 6 (circle)_____ OR _____MPI (perc rate)

28. WATER TABLE: (use same soil log hole used above) DEPTH: (measured from bottom of hole)_____

29. MOTTLING: DEPTH (measured from bottom of disposal system) _____

30. DRAINFIELD: DEPTH (measured from bottom of disposal system) _____

31. DEPTH OF SLUDGE: (if present, measured from bottom of disposal system)_____

32. DRAINFIELD FLOODED: YES / NO IF YES: # OF LINES FLOODED_____

33. IS SYSTEM CURRENTLY SURFACING: YES / NO LOCATION : (circle) Septic Tank / Pump Tank / Sand Filter /
Mound / Drainfield / ATU / Other _____

34. WASTE CHARACTERISTICS: TEMP_____ DO_____ pH_____

35. WASTE STRENGTHS: BOD_5 _____ TSS_____ FOG_____

36. DETAILS OF WHERE AND HOW SAMPLES WERE COLLECTED:_____

_____

_____

NOTES:

GEOFLOW SUBSURFACE DRIP DISPERSAL

Your answer to
- Small lots
- Poor soils
- Irregular shaped lots
- Shallow soils
- Steep slopes.
- Reuse for irrigation

Available at Milan Supply in Michigan

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- Effluent Pump Systems
- Sewage Pump Systems
- Grinder Systems

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- Infiltrator Leach Fields
- Pump Basins
- Distribution Boxes
- Guide Rail Systems
- Dispersal Technologies
- Access Doors
- Effluent Filters

Valves
- Gate
- Ball
- Paddle
- Hydrotek
- Bull Run
- Swing Check
- Ball Check

Contact Milan Supply Company for your Wastewater Needs

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